SHARP®

SERVICE MANUAL

SE0028JW76E00
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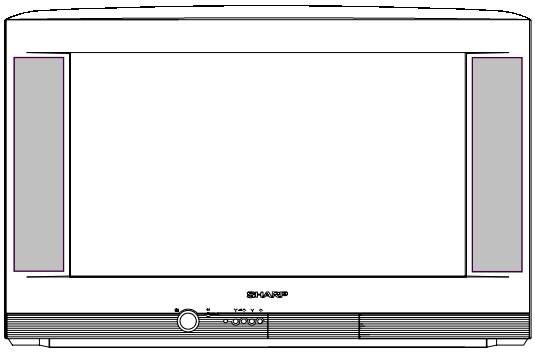
GA-200 CHASSIS

PAL B/G, I / SECAM L/L', B/G, D/K SYSTEM COLOUR TELEVISION



MODEL
28JW-76E ES/C

In the interests of user safety (required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified should be used.

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SHARP CORPORATION

This document has been published to be used for after sales service only.

SERVICE MANUAL UPDATE LOG SHEET

Technical Report No. Technical Bulletin No.	Cause / Solution	Part No.	Page No.	Application Data /Serial No.

Use this page to keep any special servicing information as Technical Report (Bulletin), Technical Information, etc.
If only part number changes are required, just change part number directly the part number in the Parts Listing Section.
If you need more information, please refer to the Technical Report (Bulletin).

ELECTRICAL SPECIFICATIONS

•Power Input ..... 220V-240 Volts AC 50Hz

•Power Consumption
Normal Operation (Method IEC60107) 94W
Stand-by Operation 1.5W

•Audio Power Output Rating (MPO) / Impedance
Internal Left Speaker 10W, 7Ω
Internal Right Speaker 10W, 7Ω

•Speakers
Left / Right ..... 12 x 6cm

•Convergence (Maximum Misconvergence)
Static (Centre) between any two colours ... 0.08 cm
Dynamic after static equals zero
Within 10cm (4") circle ..... 0.12 cm
10-25cm (4-10") circle ..... 0.20 cm
Everywhere else ..... 0.28 cm

•Focus ..... High Bi-Potential Electrostatic

•Sweep Deflection ..... Magnetic

•Picture Intermediate frequency
L' 33.9MHz
L, B/G, D/K,I 38.9MHz

•Sound Carrier Trap
L' 40.4MHz
L, D/K 32.4MHz
B/G 33.4MHz
I 32.9MHz

•Adjacent Sound Carrier Trap
L' 32.4MHz
L, D/K, B/G 40.4MHz
I 40.9MHz

•Adjacent Picture Carrier Trap
L' 41.9MHz
L, D/K, I 30.9MHz
B/G 31.9MHz

•Aerial Input Impedance
VHF/UHF ..... 75 ohm Unbalanced

•Tuning Ranges ..... 45.75MHz thru 855.25 MHz
VHF: IR A - J / S1 - S41 CH (Hiperband)
E2 - E12 / F2 - F10
UHF: I21 - I69 CH / E21 - E69
CATV Special Channels

•White Level
Set brightness control to get total picture tube cathode current of 600 μA under no signal condition. Maximum necessary correction of each picture tube cathode current to get 8550 degrees K+1 MPCD(28JW-76E/EES) or 7250 degrees K-11 MPCD(28JW76EC) screen temperature should not exceed 15% of its original value.

X=0.290 ± 0.015 Y=0.300 ± 0.015

X=0.304 ± 0.015 Y=0.306 ± 0.015 (Only for 28JW-76EC)

Specifications are subject to change without prior notice.

MODEL DESTINATION (Operation Manual Languages)

28JW-76E: Deutsch, Français, Nederlands.
28JW-76EES: Español, Português.
28JW-76EC: Czech, English, Hungarian, Polish, Romanian, Russian, Slovakian.

WARNING

The chassis in this receiver is partially hot. Use an isolation transformer between the line cord plug and power receptacle, when servicing this chassis.
To prevent electric shock, do not remove cover. No user-serviceable parts inside. Refer servicing to qualified service personnel.

IMPORTANT SERVICING NOTES

Only qualified service personnel are allowed to carry out maintenance and repair of this receiver.

Servicing of High Voltage System and CRT

It is important that the static charge is removed from the high voltage system when carrying out work on the receiver. This can be achieved by connecting a 10K resistor (with a suitably insulated lead) from the CRT cavity connector to the CRT ground tag. This must be carried out with the AC supply disconnected from the receiver.

Note the following:

- The CRT in this receiver employs Integral Implosion Protection.
- If the CRT has to be changed it MUST be replaced with the correct type for continued safe working.
- DO NOT lift the CRT by its neck.
- When handing the CRT, ensure that shatterproof goggles are worn.
- Ensure that the CRT is discharge before handling.

X-Ray

This receiver is designed to keep any x-ray emission to an absolute minimum. Some fault conditions and servicing procedures may produce potentially hazardous x-ray radiation levels. This is a problem when in close proximity to the receiver for long periods of time. To reduce any risks associated with this, please observe the following precautions:

1. When undertaking any servicing on this chassis, DO NOT increase the EHT to more than 32 KV, (at a instantaneous beam current of 1300μA).

2. Ensure that during normal operation the EHT does not exceed 29KV ± 1KV (at a beam current of 1300μA). This level has been preset in the factory. Always check that this level has not been exceeded after carrying out any repair on the receiver.
3. DO NOT replace the CRT with any other type than that specified in the parts listing as this may cause excessive x-ray radiation.

Before returning the receiver to the customer

In addition to the above checks, the following should also be carried out before returning the receiver to the customer.

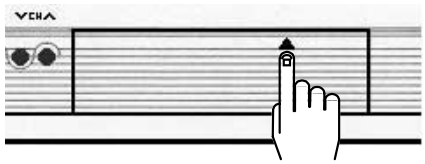
1. Inspect all the leads to ensure that they are dressed correctly and that they are not obstructed or pinched by any other parts.

2. Ensure that all protective devices are in good condition. These will include nonmetallic control knobs, insulating fish papers, cabinets backs, compartment covers or shields, mechanical insulators, etc.

CONTROLS & TERMINALS

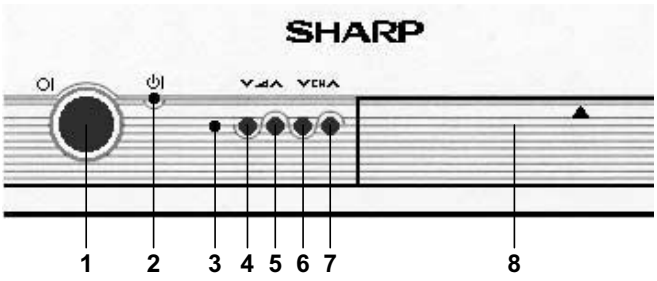
HOW TO OPEN THE DOOR

Press the top of the door, opening it slightly
hook your finger inside and pull open.



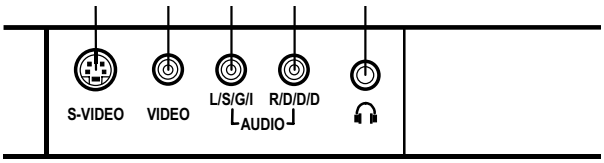
Front TV

1. Main power button
2. Power indicator
3. Remote Control sensor
4. Volume Down button
5. Volume UP button
6. Channel Down button
7. Channel Up button
8. Door



Behind the door

1. S-Video input terminal
2. VIDEO input terminal (PAL/SECAM/NTSC)
3. AUDIO input terminal (left)
4. AUDIO input terminal (right)
5. Headphone jack (3.5mm/ 16 ~ 600 ohms)



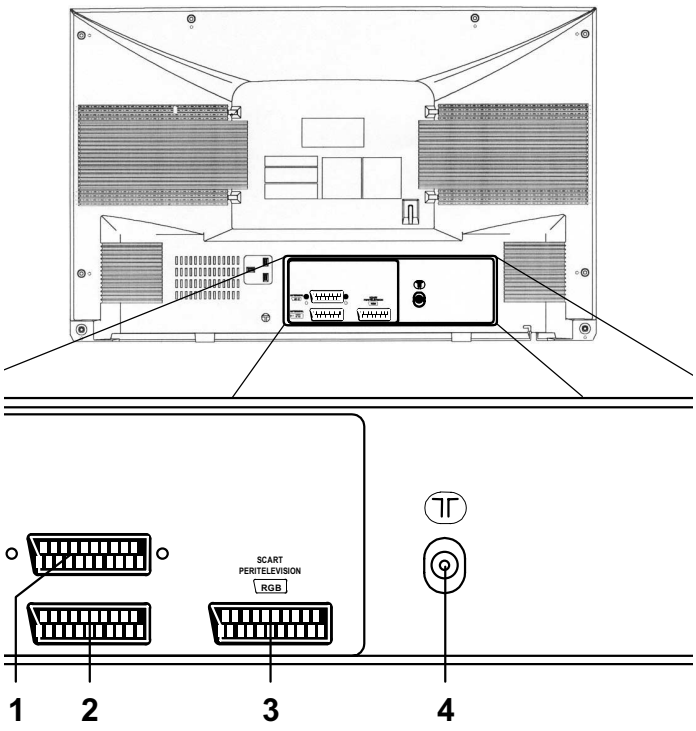
Rear TV

21-pin In/Out

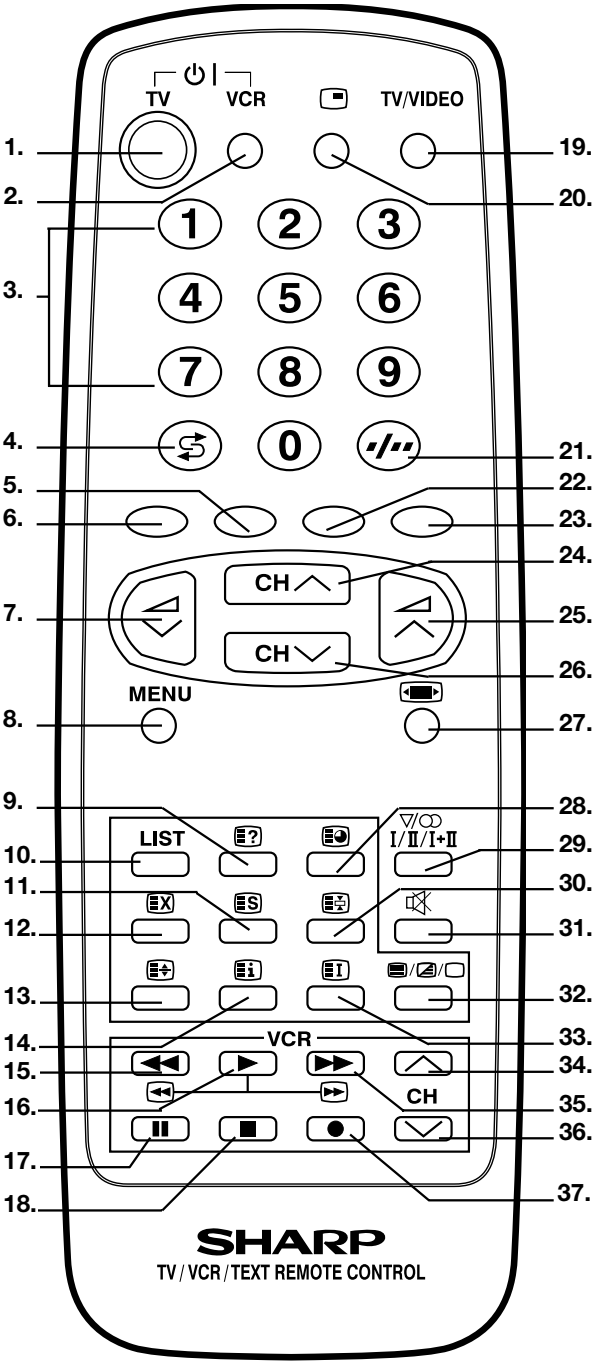
1. 21-pin Audio/Video (AV-2)
   With PAL/SECAM/NTSC Video Input
2. 21-pin Audio/Video (AV-1)
   With PAL/SECAM/NTSC Video Input /
   S-Video/ AV Link
3. 21-pin Euro SCART (RGB)
   With PAL/SECAM/NTSC Video Input

RF Input

4. Aerial terminal



REMOTE CONTROL



TV	**1**. Stand-by button (TV)
Video	**2.** Power button (VCR)
TV	**3.** 0 ~ 9 digit buttons **4.** Flash back button
Teletext	**5.** GREEN button **6.** RED button
TV	**7.** Volume DOWN button **8.** MENU button
Teletext	**9.** REVEAL button **10.** LIST button **11.** STORE button **12.** CANCEL button **13.** HALF PAGE button
TV	**14.** RESET button
Video	**15.** Rewind/picture search reverse **16.** Play button **17.** Pause/Still button **18.** Stop button
TV	**19.** TV/VIDEO button **20.** Channel Call button **21.** Single/Double entry button
Teletext	**22.** YELLOW button **23.** BLUE button
TV	**24.** Channel UP button **25.** Volume UP button **26.** Channel DOWN button **27.** Wide mode button
TV /Teletext	**28.** CLOCK button
TV	**29.** Sound mode button
Teletext	**30.** HOLD button
TV	**31.** Sound Mute button
Teletext	**32.** TEXT/MIX/PICTURE button **33.** INDEX button
Video	**34**. Channel UP button (VCR) **35.** Fast forward/picture search forward **36.** Channel DOWN button (VCR) **37.** Record button

ADJUSTMENT PROCEDURES

All adjustments to this chassis, except for focus, are carried out in the Service Mode.

• SERVICE MODE

The Service Mode is provided to enable the engineer to correctly set up the receiver to the CRT fitted in the set. Note that the value of these adjustments may vary from one receiver to another.

To enter the Service Mode, carry out the following procedure.
1. Connect a test pattern to the antenna terminal.
2. Tune the receiver to this signal.
3. Turn the receiver off using the mains switch.
4. Press volume down and channel up buttons on the front of the receiver at the same time.
5. Keeping these buttons pressed, turn the mains on.
6. When the set starts up it will be in Service Mode, then the following On Screen Display appears:

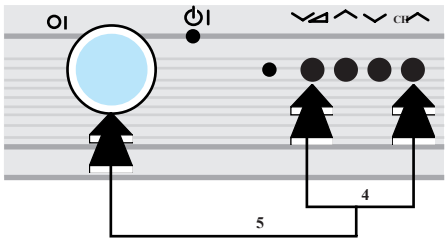


Figure 1

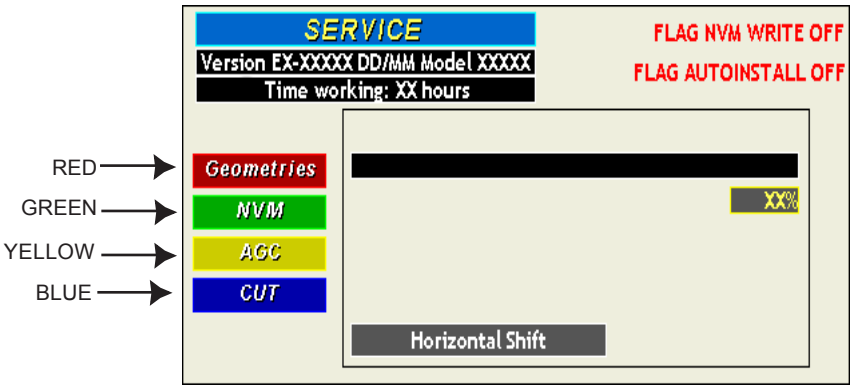


Figure 2

7. Release the two buttons.

- Use the channel up and down buttons to move between the options.
- Use the volume control buttons to change the data.
- To store the data: use the Stand-by button(1) or Store button(11) on the remote control.
- To exit the Service Mode, turn the receiver off using the Main switch.

Note: In this Service Mode, by using the colour buttons of Remote Control is possible to pass directly to the adjustments that are indicated inside of each coloured box (see Figure 2), as follows.

Press the RED button to access to Geometry adjustments.
Press the GREEN button to access to NVM adjustments.
Press the YELLOW button to access to Automatic Gain Control adjustments.
Press the BLUE button to access to CUT OFF adjustments.

Adjustment menu:
The following adjustments can be carried out in the Service Mode.

- Horizontal shift
- Horizontal size
- Pin phase
- Pin amplitude
- Upper corner correction
- Lower corner correction
- Extreme corner correction
- Vertical linearity
- Vertical angle
- Vertical bow
- Vertical size
- Vertical S-correction
- Vertical shift
- Cut RED
- Cut GREEN
- Cut BLUE
- Hot Cut RED
- Hot Cut GREEN
- Hot Cut BLUE
- Cold Cut RED
- Cold Cut GREEN
- Cold Cut BLUE
- Automatic Gain Control
- Subcarrier adjustment (ONLY PAL)
- NVM PAGE
- NVM POSITION
- NVM VALUE

The following geometry adjustments can be carried out. Detailed instructions on how to execute these are given on the following pages:

Horizontal
- Horizontal shift
- Horizontal size
- Pin phase
- Pin amplitude
- Vertical angle
- Vertical bow
- Upper corner correction
- Lower corner correction
- Extreme corner correction

Vertical
- Vertical size
- Vertical S-correction
- Vertical shift
- Vertical linearity

Just in case the TV set requires a full geometry adjustment, please proceed first with Vertical according to the above order, and after that, adjust Horizontal according to the above order.

Geometry Adjustments

Horizontal Shift

Adjust the Horizontal shift so that the picture is centred.
The effect of this adjustment is shown in figure 3.

- When the volume up button is pressed, the picture moves to the left.
- When the volume down button is pressed, the picture moves to the right.
- Press the stand-by button on the remote control to store.

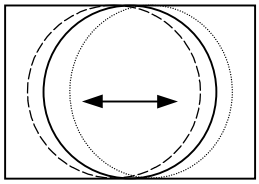


Figure 3

Horizontal size

Adjust the Horizontal size so that 8% over-scan is achieved.
The effect of this adjustment is shown in figure 4.

- When the volume up button is pressed, horizontal scanning increases.
- When the volume down button is pressed, horizontal scanning decreases.
- Press the stand-by button on the remote control to store.

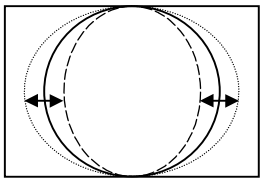


Figure 4

Pin phase

Adjust the Pin phase so that the picture is symmetrical top and bottom.
The effect of this adjustment is shown in figure 5.

- When the volume up button is pressed, side pincushion changes.
- When the volume down button is pressed, side pincushion changes.
- Press the stand-by button on the remote control to store.

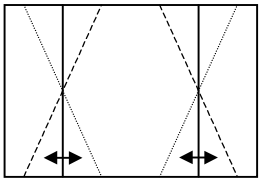


Figure 5

Pin amplitude

Adjust the Pin amplitude so that the picture is centred.
The effect of this adjustment is shown in figure 6.

- When the volume up button is pressed, side pincushion changes from pincushion to barrel shape.

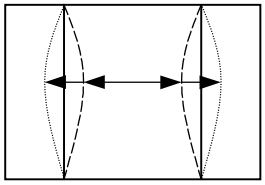


Figure 6

- When the volume down button is pressed, side pincushion changes from barrel shape to pincushion.
- Press the stand-by button on the remote control to store.

Upper corner correction

Adjust the Upper Corner Correction so that the picture is centred.
The effect of this adjustment is shown in figure 7.

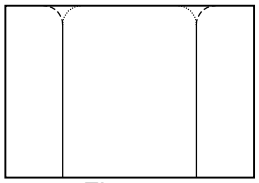


Figure 7

- When the volume up button is pressed, side pincushion changes from pincushion to barrel shape.
- When the volume down button is pressed, side pincushion changes from barrel shape to pincushion.
- Press the stand-by button on the remote control to store.

Lower corner correction

Adjust the Lower corner correction so that the picture is centred.
The effect of this adjustment is shown in figure 8.

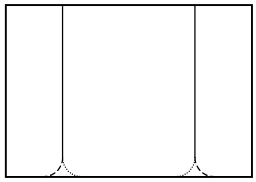


Figure 8

- When the volume up button is pressed, side pincushion changes from pincushion to barrel shape.
- When the volume down button is pressed, side pincushion changes from barrel shape to pincushion.
- Press the stand-by button on the remote control to store.

Extreme corner correction

Adjust the Extreme corner correction so that the picture is centred.
The effect of this adjustment is shown in figure 9.

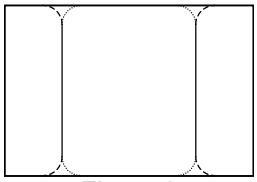


Figure 9

- When the volume up button is pressed, side pincushion changes from pincushion to barrel shape.
- When the volume down button is pressed, side pincushion changes from barrel shape to pincushion.
- Press the stand-by button on the remote control to store.

Vertical linearity

Adjust the Vertical linearity so that the upper and lower parts of the picture are symmetrical.
The effect of this adjustment is shown in figure 10.

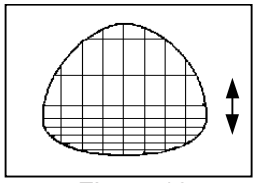


Figure 10

- When the volume up button is pressed, the upper picture scanning decreases and the lower picture scanning increases.
- When the volume down button is pressed, the upper picture scanning increases and the lower picture scanning decreases.
- Press the stand-by button on the remote control to store.

Vertical angle

Adjust the Vertical angle so that the picture is centred.
The effect of this adjustment is shown in figure 11.

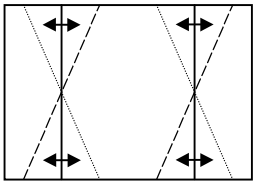


Figure 11

- When the volume up button is pressed, the vertical angle changes to right.
- When the volume down button is pressed, the vertical angle changes to left.
- Press the stand-by button on the remote control to store.

Vertical bow

Adjust the Vertical bow so that the picture is centred.
The effect of this adjustment is shown in figure 12.

- When the volume up button is pressed, the vertical bow changes to left.
- When the volume down button is pressed, the vertical bow changes to right.
- Press the stand-by button on the remote control to store.

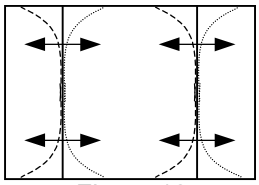


Figure 12

Vertical size

Adjust the Vertical size so that 8% over-scan is achieved.
The effect of this adjustment is shown in figure 13.

- When the volume up button is pressed, the vertical size of the picture increases.
- When the volume down button is pressed, the vertical size of the picture decreases.
- Press the stand-by button on the remote control to store.

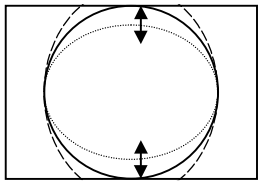


Figure 13

Vertical S-correction

Adjust the Vertical S-correction so that the picture symmetrical between the top, centre and bottom. The effect of this adjustment is shown in figure 14.

- When the volume up button is pressed, the top and bottom scanning decreases and the centre scanning increases.
- When the volume down button is pressed the top and bottom scanning increases and the centre scanning decreases.
- Press the stand-by button on the remote control to store.

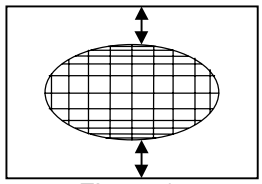


Figure 14

Vertical Shift

Adjust the Vertical Shift so that the picture is centred.
The effect of this adjustment is shown in figure 15.

- When the volume up button is pressed, the picture moves up.
- When the volume down button is pressed, the picture moves down.
- Press the stand-by button on the remote control to store.

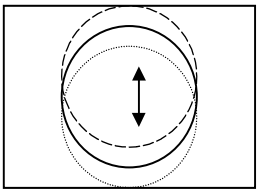


Figure 15

G2 Adjustment

Follow the procedure below to set the G2:

1. Tune the set to the output of a signal generator (Cross-Hatch pattern).
2. In the user menu, set contrast to 80/100 and brightness to 40/100.
3. Connect the oscilloscope to the RED catode of cathode tube (pin 8 of CRT socket) and adjust G2 to read 150V on the sensor pulse as in figure 16.

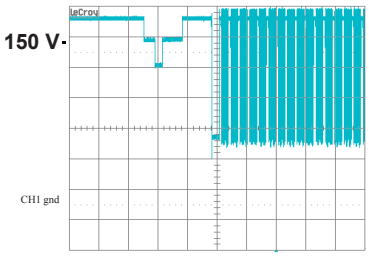


Figure 16

Note:
Oscilloscope should be adjusted for vertical TV field trigger and synchronized with video signal.

Colour Adjustments

The following adjustments should only be carried out when the CRT or IC850, IC851 and IC852 are replaced.

Follow the procedure below to set the Cut Off.

Do not change the Cut RED value (50%).

1. Adjust G2.
2. Tune a white pattern.
3. Adjust colour to minimum.
4. Position colorimeter in the centre of screen.
5. Adjust brightness and contrast to obtain a luminance of »20 NITS.
6. Operate in Service Mode and select location GREEN CUT OFF and BLUE CUT OFF, to obtain colour coordinates:

   X=0.290 ± 0.015 Y=0.300 ± 0.015

   X=0.304 ± 0.015 Y=0.306 ± 0.015 (ONLY FOR 28JW-76EC)

To increase press volume-up button and to decrease press volume down button.

BLUE CUT OFF alter «X» e «Y» coordinates.

GREEN CUT OFF alter «Y» coordinate.

Press the Store button of Remote Control to store all values.

Follow the procedure below to adjust the customer Colour Limit Control (Hot / Cold).

1. Tune a white pattern.
2. Adjust colour to minimum.
3. Position colorimeter in the centre of screen.
4. Adjust brightness and contrast to obtain a luminance of »20 NITS.
5. Operate in Service Mode and select location “Hot Cut RED”, “Hot Cut GREEN” and “Hot Cut BLUE” by channel up/down buttons of the Remote Control.
6. Press volume up/down to adjust “Hot Cut RED”, “Hot Cut GREEN” and “Hot Cut BLUE” to obtain the colour limit coordinates (X/Y) for HOT picture variation.
7. Select location ”Cold Cut RED”, “Cold Cut GREEN” and “Cold Cut BLUE” by channel up/down buttons of the Remote Control.
8. Press volume up/down to adjust “Cold Cut RED”, “Cold Cut GREEN” and “Cold Cut BLUE” to obtain the colour limit coordinates (X/Y) for COLD picture variation.
9. Press the Store button of Remote Control to store all adjustments.
10. Turn off the receiver by Main switch to exit the Service Mode.

Picture Adjustments

Automatic Gain Control Adjustment (B/G, D/K)

To correctly align the Automatic Gain Control, follow the procedure outlined below:

1. Tune the set into a pattern generator on E-12.
2. Enter the Service Mode.
3. Press the YELLOW button of Remote Control to select “Automatic Gain Control”
4. Press volume up/down to adjust to “109 dB/µV”.
5. It will be stored automatically.
6. Turn off the receiver by Main switch to exit the Service Mode.

Automatic Gain Control Adjustment (I)

To correctly align the Automatic Gain Control, follow the procedure outlined below:

1. Tune the set into a pattern generator on I-21.
2. Enter the Service Mode.
3. Press the YELLOW button of Remote Control to select “Automatic Gain Control”

4. Press volume up/down to adjust to “109 dB/μV”.
5. It will be stored automatically.
6. Turn off the receiver by Main switch to exit the Service Mode.

Automatic Gain Control Adjustment (L)

To correctly align the Automatic Gain Control, follow the procedure outlined below:

1. Tune the set into a pattern generator on F-10.
2. Enter the Service Mode.
3. Press the YELLOW button of Remote Control to select “Automatic Gain Control”
4. Press volume up/down to adjust to “103 dB/μV”.
5. It will be stored automatically.
6. Turn off the receiver by Main switch to exit the Service Mode.

Automatic Gain Control Adjustment (L’)

To correctly align the Automatic Gain Control, follow the procedure outlined below:

1. Tune the set into a pattern generator on F-4.
2. Enter the Service Mode.
3. Press the YELLOW button of Remote Control to select “Automatic Gain Control”
4. Press volume up/down to adjust to “103 dB/μV”.
5. It will be stored automatically.
6. Turn off the receiver by Main switch to exit the Service Mode.

Subcarrier adjustment (ONLY PAL)

1. Tune the colour bar signal pattern (Subcarrier PAL).
2. Enter the Service Mode.
3. Press channel up/down buttons of Remote Control to select “Subcarrier adjustment”.
4. Press volume up/down buttons of Remote Control to adjust Subcarrier frequency until “OK” appear on screen.
5. Press Stand-by button of Remote Control to store adjust.
6. Turn off the receiver by Main switch to exit the Service Mode.

Changing NVM Data

To change the data contained within the Non Volatile Memory, it is necessary to first select the page the data is stored in, then the position and finally to change the data itself.

NOTE: The values of “Page, Position and Value” start by “0x”. It means that the two next locations are hexadecimal representations.
The procedure below outlines this process.

1. Enter the Service Mode.
2. Press the GREEN button of Remote Control to access to “NVM / PAGE”, use the volume up/down buttons to change this data (data is shown in hexadecimal format).
3. Press the channel up button to select “NVM / POSITION”, use the volume up/down buttons to change this data (data is shown in hexadecimal format).
4. Press the channel up button to select “NVM / VALUE”, use the volume up/down buttons to change this data (data is shown in hexadecimal format).
5. Once this data has been set, press the stand-by button to store.
6. If another NVM value has to be changed, use the channel down button to select the page or position and repeat as necessary.

Note:
Do not change any NVM data, unless you have been advised to do so by a Sharp representative. If data is incorrectly changed, serious damage may occur to the receiver.

Flag NVM write ON/OFF

To use this function to rewrite the NVM. It is only necessary when the software of Flash memory (IC6003) change .

1. Enter the Service Mode.
2. Press the Sound mode button(29) of Remote Control. “FLAG NVM WRITE ON” is activated.
3. To exit the Service Mode, press the volume down and channel up buttons on the front of the receiver at the same time.
4. When “RE-WRITING NVM” appears on the screen, the receiver is now rewriting datas in NVM memory.
5. When the process finish the TV turns off and turn on automatically.
6. After rewriting NVM is necessary to adjust the TV set (Geometries, AGC, G2 and Colour Adjustments)

Flag Autoinstall ON/OFF

To use this function to activated Autoinstall mode.

1. Enter the Service Mode.
2. Press MENU button of Remote Control to select “FLAG AUTOINSTALL ON”.
3. Turn off the receiver by Main switch.
4. Turn on the receiver by Main switch.
5. Now the receiver shows the Autoinstallation menu as shown in Figure 17.

Figure 17: Auto Installation Menu

Protections Cancel

To cancel the PIN protection, follow the procedure outlined below:

1. Connect a Test Pattern signal to the antenna terminal.
2. Press main switch to OFF.
3. Enter in Service Mode. See procedure on Page 7.
4. When the set starts up it will be in Service Mode. See figure 2 on Page 7.
5. Press main switch to OFF.
6. The protection has been cancelled.

How To Replace a Damaged NVM by a Blank One

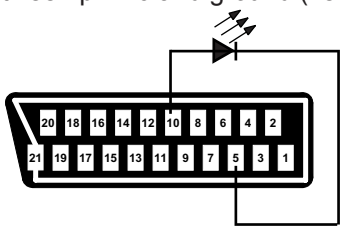
To replace the NVM, follow the procedure outlined below:

1. Change IC6010 by a blank one.
2. Switch on the TV. Basic data is written automatically (Blue back appears when process is finished).
3. Proceed to rewrite NVM described above (Flag NVM write ON/OFF).
4. Proceed Autoinstallation as described above (Flag Autoinstall ON/OFF).

LED FLASHING CODES

This model is not provided with stereo led, so to let “flashing codes” for IC failures detection when the TV set does not work, we offer the next solution:

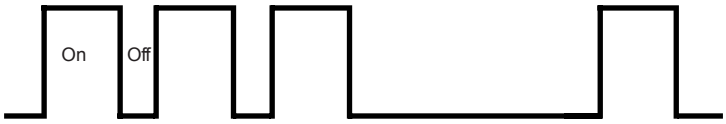
- The detection of failure will be made with an external LED.
- The output of the flashing code will be via AV1 (pin 10).
- Insert a generic led diode between pin 10 and ground (i.e. pin 5) as shows the below picture.



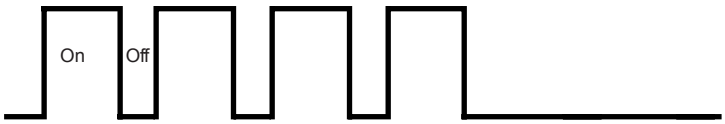
Follow the sequence according to the below information, as a guide to fault finding.

1. **Unable to read or write into NVM:** 66% ON, 33% OFF twice and OFF for a second.

2. **MSP 3410 failure:** 66% ON, 33% OFF for three times and OFF for a second.



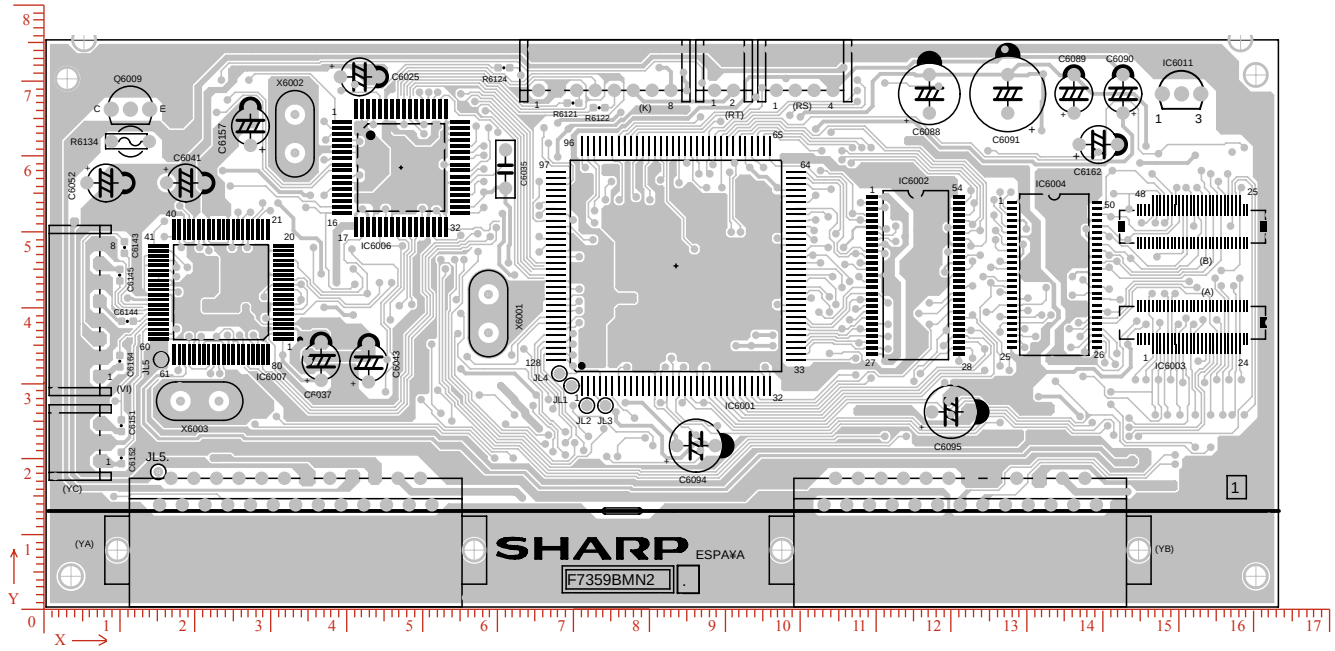
3. **SDA 9380 failure:** 66% ON, 33% OFF for four times and OFF for a second.



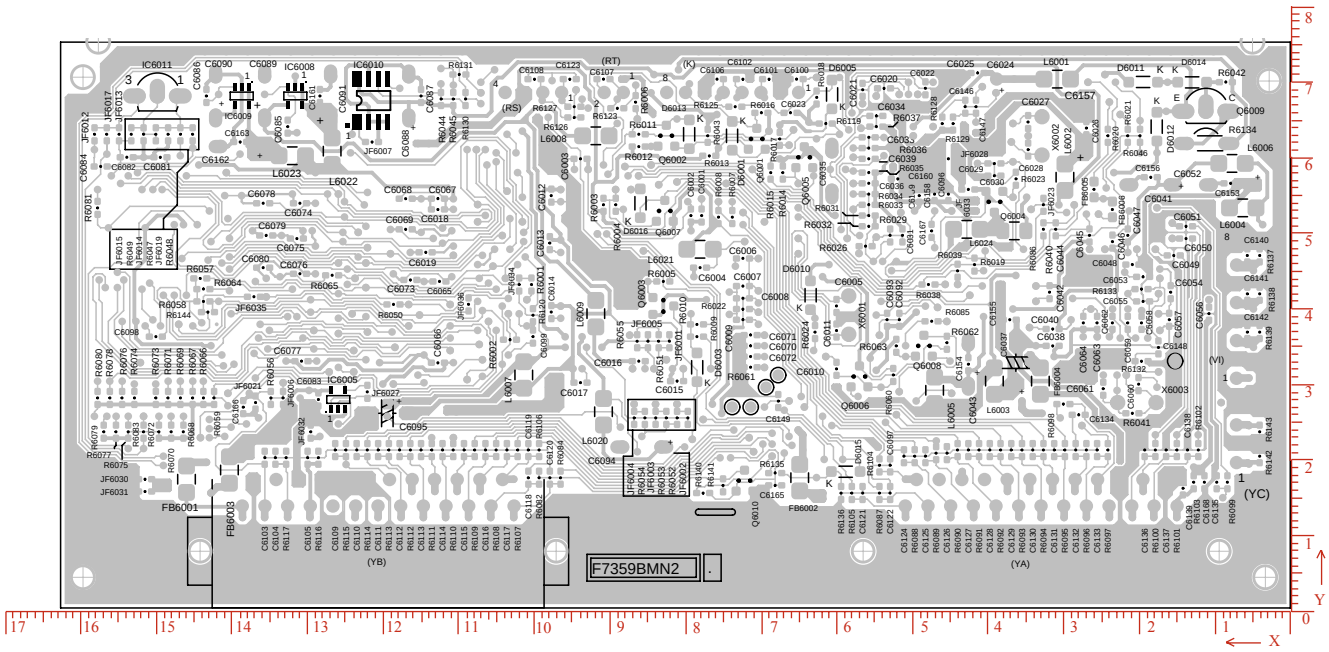
4. **VSP 9407 failure:** 66% ON, 33% OFF for five times and OFF for a second.

PRINTED WIRING BOARDS

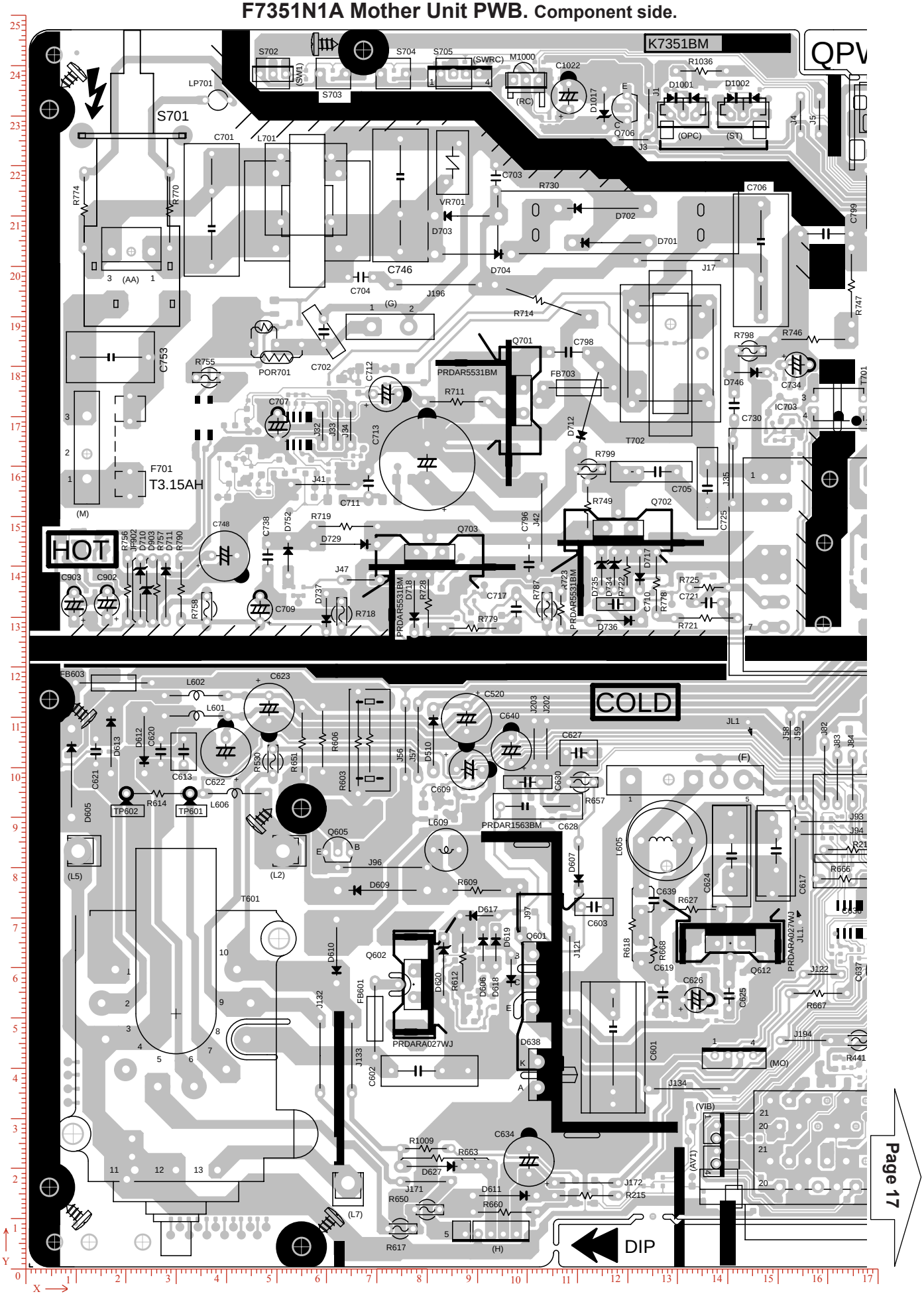
F7359N2 Digital Module Unit PWB
Component side



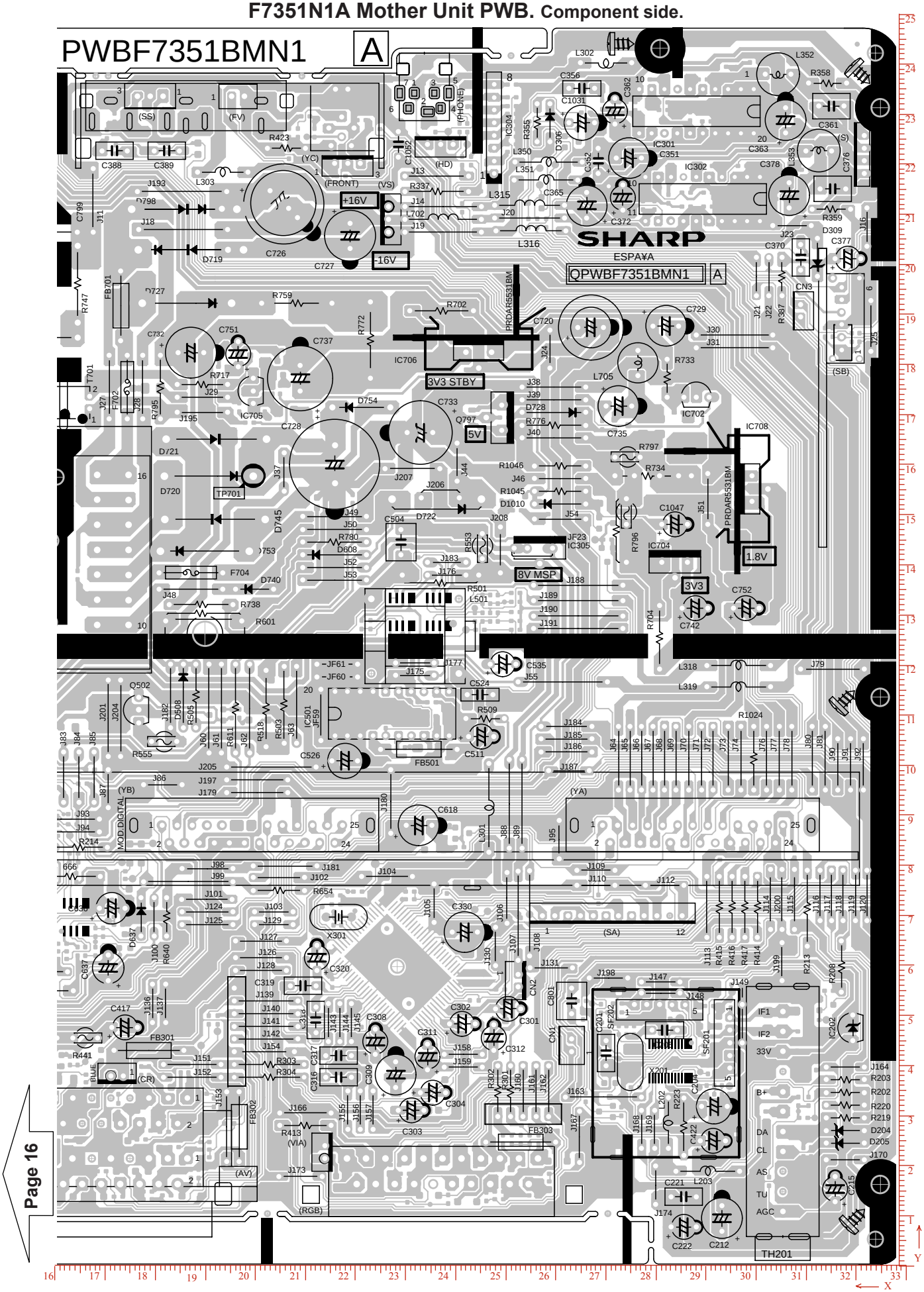
F7359N2 Digital Module Unit PWB
Copper side



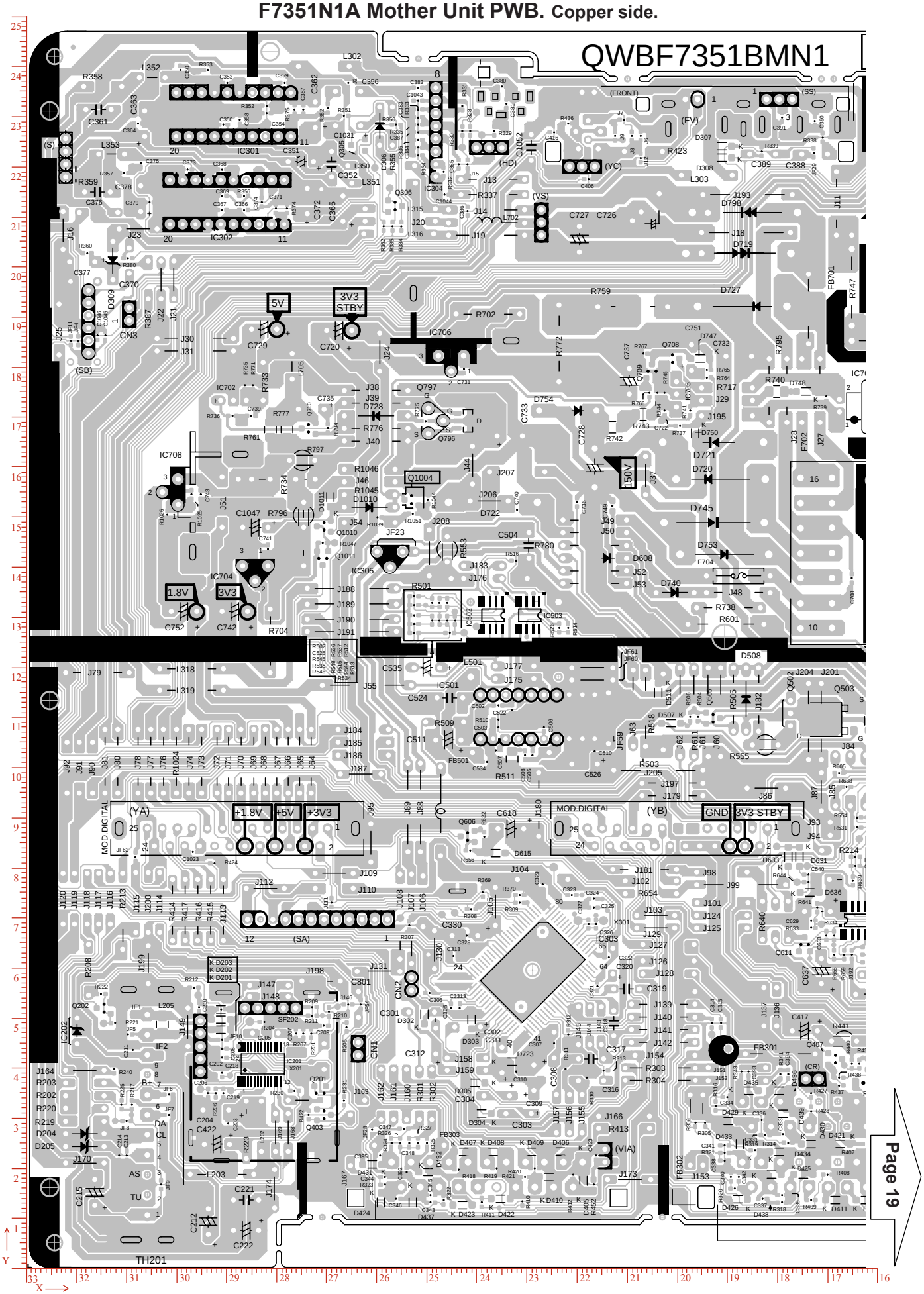
F7351N1A Mother Unit PWB. Component side.



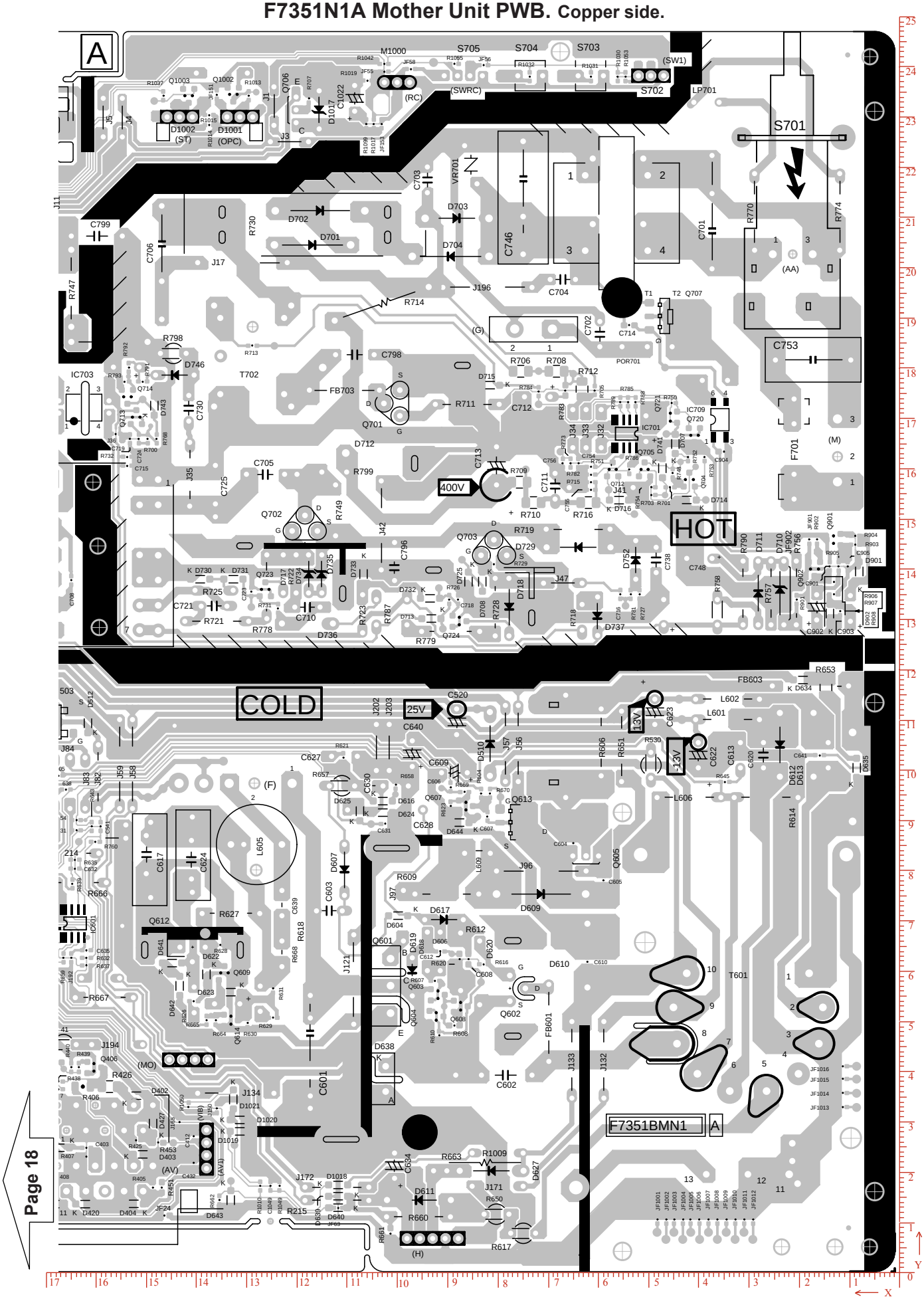
F7351N1A Mother Unit PWB. Component side.



F7351N1A Mother Unit PWB. Copper side.

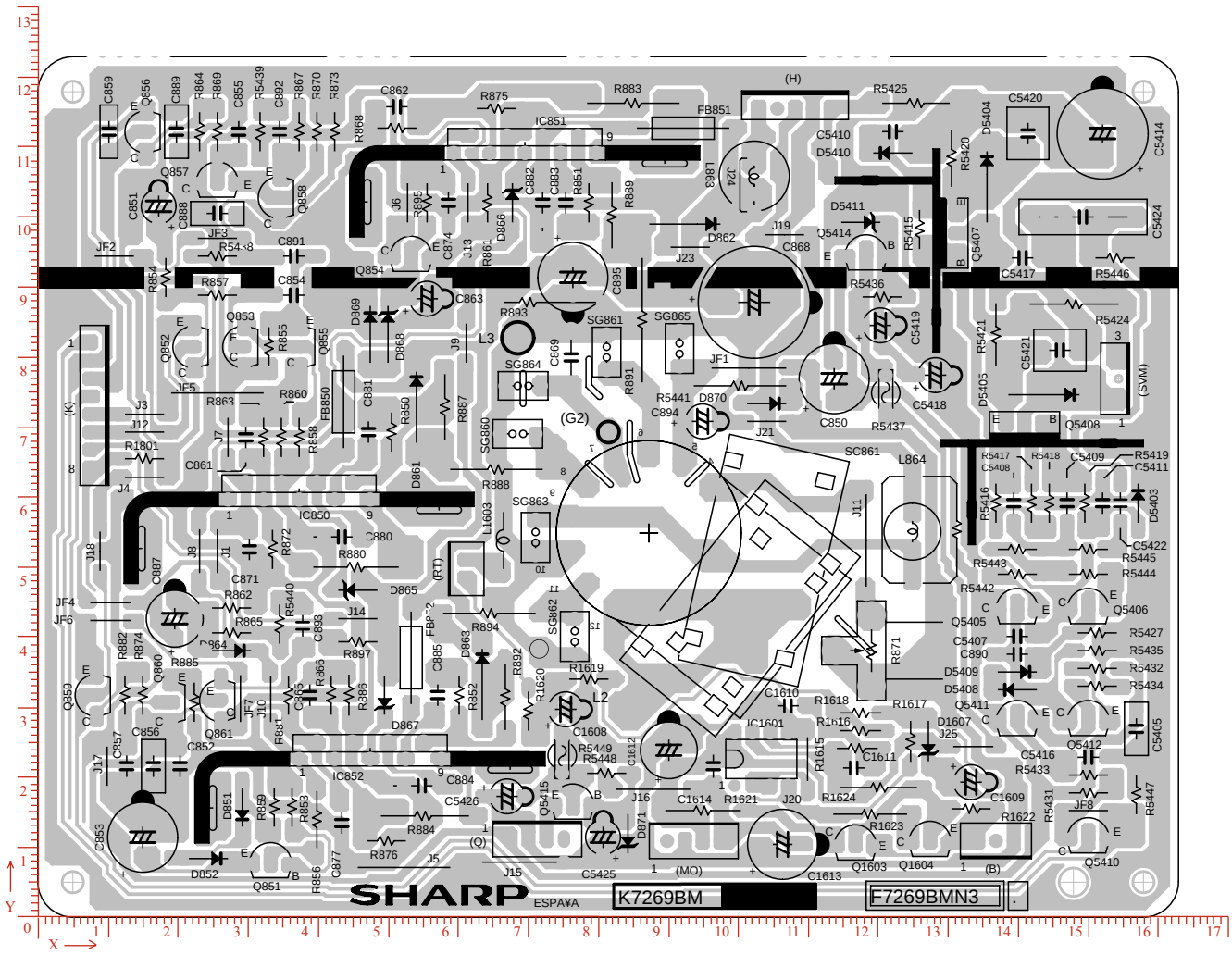


F7351N1A Mother Unit PWB. Copper side.



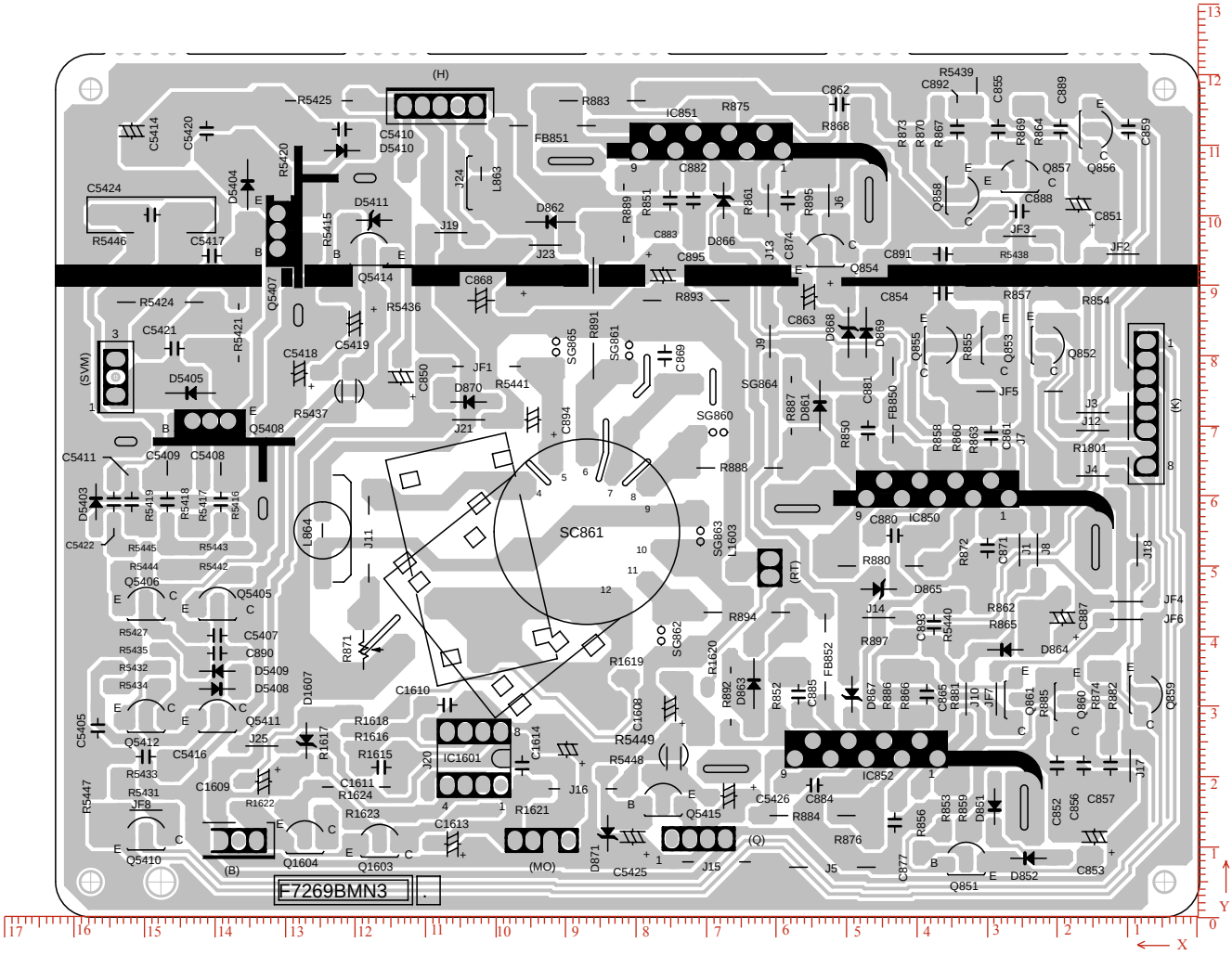
F7269N3 CRT Unit PWB

Component side

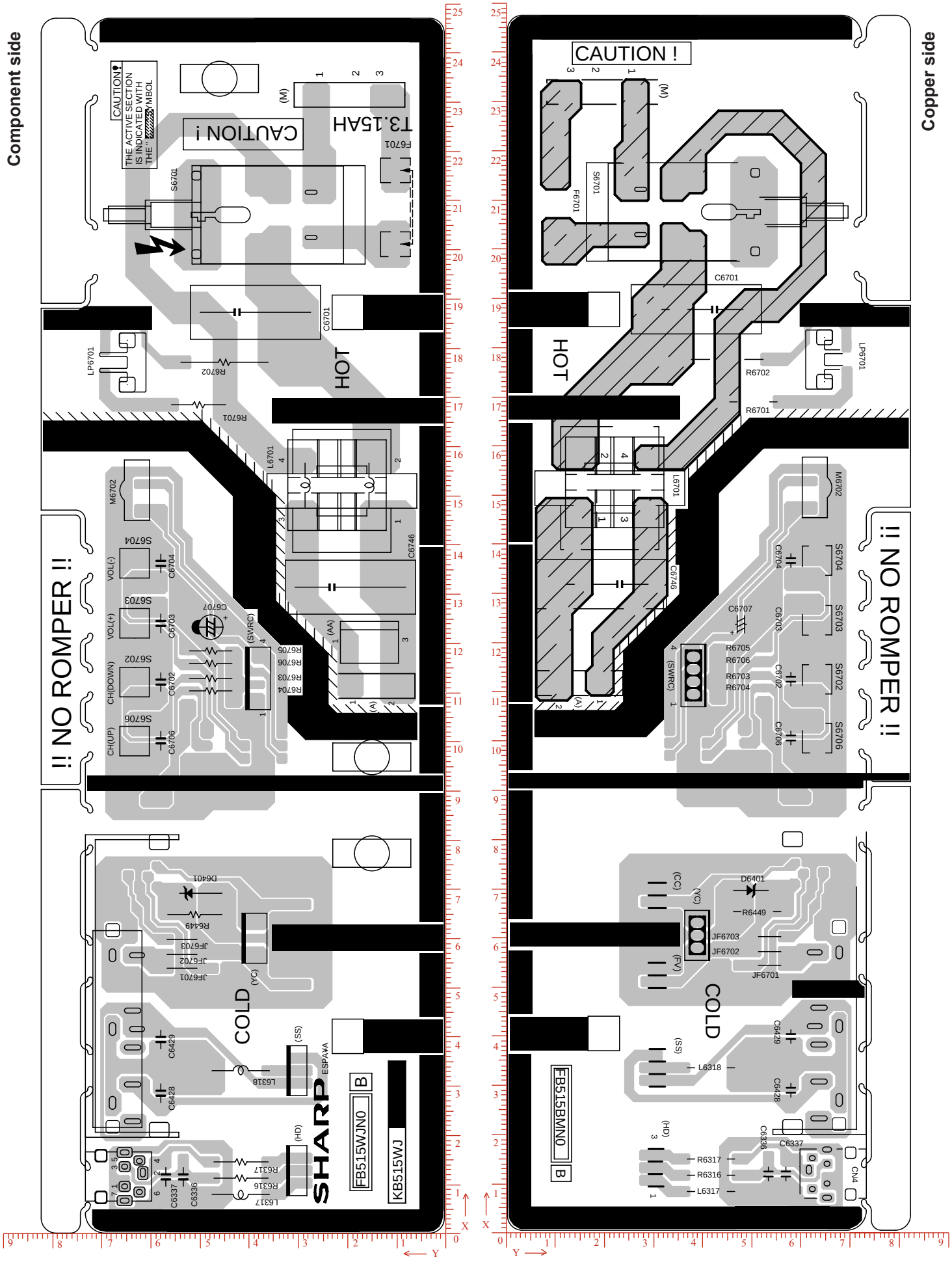


F7269N3 CRT Unit PWB

Copper side



FB515N0 POWER SWITCH Unit PWB



COMPONENT LOCATION TABLES

F7359N2 Digital Module Unit PWB

Component side Copper side

Ref No	Xum	Yum
(K)	73914	68326
(RS)	100330	68326
(RT)	89662	68326
(VI)	7112	39217
(YA)	33020	17018
(YB)	120904	17018
(YC)	7112	21742
C6025	41452	70104
C6035	60756	57912
C6037	36372	32512
C6041	18491	56083
C6043	42672	32308
C6052	7924	56083
C6088	116840	67868
C6089	135940	67868
C6090	142443	67868
C6091	127203	67868
C6094	85953	21336
C6095	119684	25806
C6157	27025	63601
C6162	139192	61163
IC6006	46939	58115
IC6007	23164	41656
IC6011	150164	67868
JL1	69494	29260
JL2	71526	26619
JL3	73964	26619
JL4	67868	30886
JL5	15240	32715
JL5.	14833	17881
Q6009	11176	65836
R6134	11176	61569
REF1	5842	-3023
REF4	59334	6096
REF5	157480	15849
X6001	58521	38811
X6002	32918	62585
X6003	20320	27228

Ref No	Xum	Yum
(A)	151638	37592
(B)	151638	50292
C6001	78028	52019
C6002	79451	52019
C6003	94081	59537
C6004	78232	45110
C6005	60147	40030
C6006	72542	46329
C6007	72542	42672
C6008	72542	41046
C6009	72542	38201
C6010	60147	31699
C6011	60147	36779
C6012	97942	54660
C6013	98145	48361
C6014	97942	39217
C6015	81280	30073
C6016	86360	32715
C6017	94081	29870
C6018	112979	52832
C6019	114604	47142
C6020	53848	68884
C6021	56692	68681
C6022	48361	68884
C6023	66243	65633
C6024	41452	70916
C6026	27025	63601
C6027	34747	64414
C6028	34747	60756
C6029	39217	58928
C6030	39217	57302
C6031	51409	49377
C6033	55880	62382
C6034	54864	65227
C6036	55880	56286
C6038	31496	34747
C6039	55880	59537
C6040	31496	36982
C6042	31902	41859
C6044	31089	50190
C6045	26619	49377
C6046	23571	48564
C6047	21539	49377
C6048	20929	45516
C6049	15443	46736
C6050	13817	48971
C6051	13817	50596
C6053	19507	43891
C6054	15849	41859
C6055	19507	40640
C6056	10769	39014
C6057	16052	38201
C6058	19710	37795
C6059	21539	37795
C6060	20116	29667
C6061	24790	29057
C6062	23571	37795

Ref No	Xum	Yum
C6063	25603	37795
C6064	27432	37795
C6065	112776	43281
C6066	112979	32512
C6067	112979	54254
C6068	117246	54254
C6069	117246	50190
C6070	71526	34747
C6071	71526	36169
C6072	71526	33324
C6073	116636	43484
C6074	131267	53644
C6075	131673	48971
C6076	131267	44297
C6077	131063	32715
C6078	136144	53644
C6079	135737	49377
C6080	136144	45110
C6081	149758	59740
C6082	154228	59740
C6083	128828	27635
C6084	157683	58521
C6085	132892	63804
C6086	143662	67868
C6087	115214	67868
C6092	51816	38201
C6093	53441	38201
C6096	45313	54864
C6097	53035	18897
C6098	150368	35966
C6099	100380	35966
C6100	65430	70104
C6101	69088	70104
C6102	72542	70104
C6103	135940	19913
C6104	134518	19913
C6105	130251	19913
C6106	75996	70104
C6107	91033	70104
C6108	100177	70104
C6109	126593	20929
C6110	123748	20929
C6111	120904	20929
C6112	118059	20929
C6113	115214	20929
C6114	112369	20929
C6115	109524	20929
C6116	106680	20929
C6117	103835	20929
C6118	100990	17272
C6119	100990	20929
C6120	98145	17272
C6121	56692	15240
C6122	53035	15240
C6123	95504	70104
C6124	51206	20116
C6125	48361	20116

Ref No	Xum	Yum
C6126	45516	20523
C6127	42672	20929
C6128	39827	20929
C6129	36982	20929
C6130	34137	20929
C6131	31292	20929
C6132	28448	20929
C6133	25603	20929
C6134	28041	25603
C6135	9753	16662
C6136	19304	20929
C6137	16459	20929
C6138	13614	20929
C6139	14224	15849
C6140	5689	46736
C6141	5689	41656
C6142	5689	36576
C6143	10363	47548
C6144	10769	37795
C6145	9753	43891
C6146	43078	66446
C6147	41656	66446
C6148	17475	34544
C6149	67868	27432
C6151	9956	23977
C6152	9956	19710
C6153	7924	56286
C6154	42672	32308
C6155	37185	38201
C6156	18491	57099
C6158	47142	54864
C6159	49174	54660
C6160	52019	56896
C6161	128625	67868
C6163	139192	61772
C6164	9753	32512
C6165	68275	16256
C6166	138785	26619
C6167	47548	49987
C6168	11379	16662
D6001	73964	62585
D6003	78638	31902
D6005	60756	68072
D6010	63601	41452
D6011	19507	69697
D6012	17678	63804
D6013	79654	62788
D6014	13004	69697
D6015	58928	18084
D6016	86156	53644
FB6001	146304	17068
FB6002	65024	17272
FB6003	140614	18288
FB6004	33121	30073
FB6005	26009	55473
FB6006	23571	52832
IC6001	83312	45110

Ref No	Xum	Yum
IC6002	115036	43865
IC6003	152146	43942
IC6004	133350	43942
IC6005	126187	27635
IC6008	131876	67868
IC6009	138988	67868
IC6010	121513	67259
JF6001	82296	35356
JF6002	79857	25196
JF6003	84124	25196
JF6004	86969	25196
JF6005	85140	35356
JF6006	133502	27838
JF6007	121716	61772
JF6012	158496	62788
JF6013	155244	62788
JF6014	150368	62788
JF6015	153619	62788
JF6017	156870	62788
JF6019	147116	62788
JF6021	137160	27228
JF6023	32715	53441
JF6027	122326	28651
JF6028	45313	59537
JF6030	151790	17068
JF6031	151790	15443
JF6032	129844	23368
JF6033	42672	55473
JF6034	102209	42875
JF6035	137363	41249
JF6036	108915	40233
L6001	30886	70104
L6002	29870	57099
L6003	39217	30073
L6004	6299	53035
L6005	47142	28854
L6006	7721	58928
L6007	101600	30886
L6008	92049	62585
L6009	92049	39014
L6020	91033	26009
L6021	78232	47548
L6022	127000	60553
L6023	132283	59944
L6024	42875	50190
Q6001	70713	62179
Q6002	82702	62585
Q6003	83108	40030
Q6004	39217	53848
Q6005	64414	59740
Q6006	57099	30683
Q6007	82905	52628
Q6008	48564	34747
Q6010	72339	16865
R6001	100584	42875
R6002	103428	35560
R6003	91033	53441

Ref No	Xum	Yum
R6004	89408	53441
R6005	83108	43281
R6006	86766	67056
R6007	73964	51816
R6008	75793	51816
R6009	78638	35966
R6010	78638	37592
R6011	86360	62788
R6012	86360	61163
R6013	77012	59944
R6014	67259	57708
R6015	68884	57708
R6016	70104	65633
R6017	67665	62179
R6018	62788	67665
R6019	41859	45516
R6020	24180	62585
R6021	21539	62585
R6022	72542	39624
R6023	36372	56896
R6024	62992	36576
R6026	56286	47955
R6029	53035	49377
R6031	55880	52019
R6032	55880	50596
R6033	55880	53441
R6034	55880	54864
R6035	55880	57708
R6036	55880	60960
R6037	54864	63804
R6038	47955	42875
R6039	44094	44704
R6040	32715	50190
R6041	20929	25806
R6042	8534	69697
R6043	77216	62585
R6044	112572	67462
R6045	110947	67462
R6046	19913	62585
R6047	148742	62788
R6048	145491	62788
R6049	151993	62788
R6050	118872	40233
R6051	83718	35356
R6052	81280	25196
R6053	82702	25196
R6054	85547	25196
R6055	86563	35356
R6056	135128	27838
R6057	144475	43688
R6058	144068	40640
R6059	142646	27838
R6060	52628	30886
R6061	71526	31902
R6062	45516	35153
R6063	52222	34747
R6064	144068	42265

F7359N2 Digital Module Unit

PWB Copper side

Ref No	Xum	Yum
R6065	127000	44094
R6066	144068	27838
R6067	145491	27838
R6068	146710	23368
R6069	147116	27838
R6070	148336	23368
R6071	148742	27838
R6072	149961	23368
R6073	150368	27838
R6074	153212	27838
R6075	154025	23368
R6076	154838	27838
R6077	155651	23368
R6078	156464	27838
R6079	157276	23368
R6080	158089	27838
R6081	158089	53035
R6082	99568	17272
R6083	151993	23368
R6084	96723	17272
R6085	47548	37998
R6086	36576	49987
R6087	54457	15240
R6088	49784	20116
R6089	46939	20523
R6090	44094	20929
R6091	41249	20929
R6092	38404	20929
R6093	35560	20929
R6094	32715	20929
R6095	29870	20929
R6096	27025	20929
R6097	24180	20929
R6098	30073	27025
R6099	8331	16662
R6100	17881	20929
R6101	15036	20929
R6102	12192	20929
R6103	12801	16662
R6104	54457	18897
R6105	58115	15240
R6106	99568	20929
R6107	102412	20929
R6108	105257	20929
R6109	108102	20929
R6110	110947	20929
R6111	113792	20929
R6112	116636	20929
R6113	119481	20929
R6114	122326	20929
R6115	125171	20929
R6116	128828	19913
R6117	133096	19913
R6119	61569	64211
R6120	100380	38811
R6121	69697	66649
R6122	73152	66040

Ref No	Xum	Yum
R6123	89204	66243
R6124	60553	71323
R6125	73558	66446
R6126	94894	65024
R6127	94894	66446
R6128	46126	64211
R6129	44704	64211
R6130	109321	67462
R6131	110134	70713
R6132	19710	32715
R6133	19710	42265
R6135	68275	17881
R6136	59537	15240
R6137	4064	46736
R6138	4064	41656
R6139	4064	36576
R6140	77825	15240
R6141	75184	16256
R6142	4064	20116
R6143	4064	23368
R6144	143459	39217

FB515N0 Power Switch Unit

PWB Component side

Ref No	Xum	Yum
(A)	111252	14732
(AA)	120650	15240
(CC)	68072	30480
(FV)	51816	30480
(HD)	12700	30480
(M)	231394	18034
(RC)	99060	33020
(SS)	33020	30480
(SW1)	99060	48260
(SW2)	99060	40640
(SWRC)	112776	37846
(YC)	59944	38608
BR1	234696	45720
BR2	96774	14732
BR3	77216	14732
C6336	11430	53086
C6337	11430	56642
C6428	28448	57658
C6429	39370	57658
C6701	187198	42164
C6702	112014	57658
C6703	123952	57658
C6704	136144	57658
C6706	100076	53848
C6707	123190	47498
C6746	131318	22860
CN4	11506	72999
D6401	69088	49530
D6402	59944	30480
F6701	208534	9906
IC6701	151003	65989
J401	72491	72999
JF6701	53848	53340
JF6702	56642	53340
JF6703	59690	53340
L6317	7874	41402
L6318	33020	41402
L6701	152069	21818
LP6701	177012	68986
M6702	151003	62941
R6316	11176	41402
R6317	14478	41402
R6449	64770	50800
R6701	168402	50038
R6702	177038	44704
R6703	107696	47498
R6704	112776	47498
R6705	110236	47498
R6706	118364	47498
R6707	115824	47498
S1	207010	68300
S6701	207010	69291
S6702	111988	62992
S6703	124002	62992
S6704	135991	62992
S6706	99999	62992

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Component side

Ref No	Xum	Yum
(B)	136906	10922
(MO)	93726	10922
(Q)	71374	11176
(RT)	61214	49784
C1608	75438	29718
C1609	133350	19304
C1610	107188	30226
C1611	116586	21336
C1612	90170	23876
C1613	106426	10414
C1614	96520	21590
C5405	156972	26924
C5407	139954	40132
C5408	139446	59182
C5409	147066	59182
C5410	122174	112268
C5411	152146	59182
C5414	152146	112014
C5416	150114	22860
C5417	140716	94234
C5418	128270	77470
C5419	120396	84582
C5420	141478	112014
C5421	146050	81026
C5422	154686	59182
C5424	149352	100076
C5425	80772	11430
C5426	67056	17272
C850	113792	76962
C851	17272	101600
C852	20320	21590
C853	14986	11430
C854	36576	88900
C855	28702	112268
C856	16510	21590
C857	12700	21590
C859	10160	112268
C861	29718	68580
C862	51308	115824
C863	55626	88392
C865	38862	31750
C868	102362	87884
C869	76200	80010
C871	30226	52578
C874	58674	102108
C877	43434	13462
C880	43434	54356
C881	47244	69342
C882	72136	102108
C883	75438	102108
C884	54864	18796
C885	57150	31750
C887	19558	42672
C888	25654	100584
C889	19812	112268
C890	139954	37592
C891	36576	94488
C892	34544	112268
C893	37846	41656
C894	94996	70866
C895	76454	91440
D1607	127254	25146
D5403	157226	59182
D5404	135636	104394
D5405	143764	74676
D5408	139954	32512
D5409	139954	35052
D5410	122174	109220
D5411	117602	99314
D851	29210	15748
D852	24384	8382
D861	54102	72898
D862	92456	99060
D863	63500	33274
D864	27686	38100
D865	45720	46736
D866	67818	102108
D867	49530	31750
D868	50038	83312
D869	47498	83312
D870	104140	73406
D871	84328	11938
FB850	43688	73660
FB851	92202	112776
FB852	53340	37084
IC1601	103378	22606
IC850	37338	60706
IC851	69596	110236
IC852	47498	23622
J1	25654	52324
J10	33274	31242
J11	118364	53848
J12	15240	69342
J13	61468	102108
J14	45720	42672
J15	68834	7874
J16	87884	18288
J17	9906	21590
J18	8890	52324
J19	106680	97536
J20	109982	22606
J21	104140	70866
J23	93218	95758
J24	102362	104648
J25	133604	24384
J3	15240	71882
J4	15240	62865
J5	52324	7112
J6	52832	102108
J7	27178	68580
J8	23114	52324
J9	61214	82042
JF1	101600	78486
JF2	10922	94488
JF3	25654	97028
JF4	10414	44958
JF5	25654	74930
JF6	10414	42418
JF7	28956	31242
JF8	150114	15240
L1603	66548	53848
L5	71628	38354
L863	102362	105918
L864	124968	55118
P5401	154432	76962
P661	7620	73152
P662	108204	115570
Q1603	116840	10160
Q1604	127508	10668
Q5405	139954	43942
Q5406	150114	43942
Q5407	128905	97790
Q5408	140970	68249
Q5410	150114	11176
Q5411	139954	27940
Q5412	150114	27940
Q5414	118364	94488
Q5415	76454	16002
Q851	33274	7620
Q852	22352	81534
Q853	29464	81534
Q854	53340	94284
Q855	37592	81534
Q856	15494	112268
Q857	25654	104902
Q858	34544	102870
Q859	8382	31750
Q860	19050	30734
Q861	26162	30988
R1615	117094	24130
R1616	117602	26670
R1617	124714	25146
R1618	117602	29210
R1619	78740	34036
R1620	70104	29464
R1621	94996	15240
R1622	133350	15494
R1623	118872	14732
R1624	120142	18542
R1801	15240	65531
R5415	125984	98298
R5416	136906	59182
R5417	141986	59182
R5418	144526	59182
R5419	149606	59182
R5420	130555	108458
R5421	136906	83312
R5424	148082	87630
R5425	125476	116332
R5427	151384	40640
R5431	150114	17780
R5432	151384	35560
R5433	150114	20320
R5434	151384	33020
R5435	151384	38100
R5436	120650	88646
R5437	121158	74930
R5438	25654	94488
R5439	31750	112268
R5440	34544	41910
R5441	100330	75946
R5442	139954	49022
R5443	139954	52578
R5444	150114	49022
R5445	150114	52578
R5446	153924	94234
R5447	156972	17526
R5448	81280	20574
R5449	74930	23114
R850	50546	69342
R851	78740	102108
R852	60198	31750
R853	36322	15748
R854	18288	91440
R855	33020	81534
R856	39878	13970
R857	25654	88900
R858	37338	68580
R859	33782	15748
R860	34798	68580
R861	64262	102108
R862	27686	44196
R863	32258	68580
R864	23114	112268
R865	27686	40640
R866	41910	31750
R867	37338	112268
R868	51308	112776
R869	25654	112268
R870	39878	112268
R871	119126	38100
R872	33528	52578
R873	42418	112268
R874	14986	31750
R875	65531	115570
R876	49784	10922
R880	45466	50038
R881	35814	31750
R882	12446	31750
R883	85090	116332
R884	55118	14478
R885	22352	30734
R886	44450	31750
R887	58166	72898
R888	65531	64008
R889	82042	100330
R891	86360	85344
R892	66802	31496
R893	73152	87884
R894	64516	43434
R895	55626	102108
R897	45720	39370
REF1	44450	1524
REF4	8382	-2794
SC861	87299	54914
SG860	68580	69088
SG861	81280	80772
SG862	76708	40132
SG863	71120	54279
SG864	69342	75946
SG865	91694	81280

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Component side

Ref No	Xum	Yum	Ref No	Xum	Yum	Ref No	Xum	Yum	Ref No	Xum	Yum	Ref No	Xum	Yum	Ref No	Xum	Yum
(AA)	20320	202692	C317	215900	41656	C701	36322	207264	D510	80518	105156	FB302	196088	27432	J131	258318	59182
(AV)	166649	12496	C318	211328	48768	C702	58674	186690	D605	8382	98552	FB303	252222	24384	J132	57912	42164
(CR)	171704	37592	C319	208788	55626	C703	92964	217424	D606	90424	63754	FB501	231902	102870	J133	64262	42164
(F)	119888	97282	C320	211582	61214	C704	66040	197612	D607	109474	80010	FB601	68834	49530	J134	131063	35560
(FRONT)	216458	237998	C330	241046	66294	C705	125222	158750	D608	215138	141732	FB603	16764	116586	J136	178816	52070
(FV)	195834	233426	C351	273812	220980	C706	145796	204724	D609	70358	75184	FB701	172466	191516	J137	181356	52070
(G)	71882	187706	C352	267716	220472	C707	49530	167894	D610	61214	62992	FB703	109474	175514	J139	201422	52578
(H)	91948	6604	C356	264414	234950	C709	45974	131318	D611	94742	14224	IC202	318516	47244	J14	236728	211328
(HD)	236220	223774	C361	314198	231394	C710	116840	132334	D612	22860	104902	IC301	287274	230378	J140	201422	50038
(L2)	50546	83058	C362	271018	230378	C711	67564	156464	D613	16256	104902	IC302	288544	212852	J141	201422	47498
(L5)	9652	83058	C363	305054	228600	C712	71120	174244	D617	89662	70104	IC304	246888	226822	J142	201422	44958
(L7)	63500	16764	C365	265430	211582	C713	79248	160528	D618	92964	63754	IC305	256032	143002	J143	213868	48260
(M)	11430	162306	C370	308102	201168	C717	97028	131318	D619	96012	58674	IC501	226568	109982	J144	216154	48260
(MO)	140462	42164	C372	272542	213106	C720	266192	187198	D620	82550	59436	IC702	287274	173228	J145	218440	48260
(OPC)	130301	229997	C376	314452	214884	C721	135382	132588	D627	80264	20066	IC703	161290	172212	J147	280162	56388
(PHONE)	232994	241985	C377	317500	200914	C725	135128	155448	D637	176530	69342	IC704	282956	140208	J148	280162	54102
(RC)	99009	236855	C378	305816	213614	C726	204978	211836	D701	115824	204470	IC705	198882	174498	J149	296418	48006
(RGB).	236474	18542	C388	171196	222504	C727	218186	205486	D702	114300	211328	IC706	243840	184658	J151	186690	39878
(S)	320802	221742	C389	181610	222504	C728	215138	159766	D703	87122	209804	IC708	295910	154940	J152	186690	37338
(SA)	270510	69596	C417	173228	47244	C729	281178	187452	D704	88392	202184	J1	123444	232156	J153	193548	27432
(SB)	316230	188976	C422	290576	24638	C730	140462	171958	D710	22098	135128	J100	179070	69342	J154	201066	42418
(SS)	178308	233426	C504	228346	144272	C732	186436	182118	D711	27178	135128	J101	189611	72898	J155	217678	30734
(ST)	142290	229997	C511	244348	105410	C733	232156	166116	D712	109220	171958	J102	203962	77216	J156	220218	30734
(SW1)	48539	238201	C520	87122	109474	C734	152908	180086	D717	121666	138938	J103	202946	70358	J157	222758	30734
(SWRC)	85775	238201	C524	244094	113792	C735	271780	171450	D718	76708	132334	J104	225552	77470	J158	240792	41910
(VIA)	213106	22352	C526	217170	100584	C737	208280	177038	D719	184912	202692	J105	234950	72136	J159	240792	39370
(VIB)	136906	24384	C535	248666	119888	C738	47498	141732	D719A	186436	202692	J106	249428	73152	J16	321310	207264
(VS)	225806	208788	C601	116332	47498	C742	287020	131063	D720	189992	157480	J107	251714	69596	J160	252730	34544
(YC)	217678	219964	C602	77470	39116	C746	73914	217678	D721	191516	164846	J108	254000	70104	J161	255270	34544
BLIN1	281178	38100	C603	112522	71882	C748	38862	141986	D722	235458	152908	J109	267208	78740	J162	257810	34544
BLIN2	281178	38100	C609	87630	99314	C751	195834	181864	D727	185674	192024	J11	166878	212598	J163	268732	33401
C1022	107442	233680	C613	30734	102870	C752	297180	131063	D728	258826	170180	J110	267208	75692	J164	316992	39370
C1031	264414	228092	C617	148082	82042	C753	16256	181610	D729	62992	144272	J112	280924	75692	J166	209296	30226
C1047	282956	147828	C617A	148844	83058	C796	99568	140208	D734	116586	138938	J113	289306	71374	J167	263906	25400
C1052	227838	223774	C618	231902	87630	C798	107442	182626	D735	114046	138938	J114	302006	72898	J168	276352	26924
C201	269240	42164	C619	126238	54356	C799	158750	206248	D736	116840	129032	J115	306832	72898	J169	278892	26924
C204	290830	31496	C620	26162	102870	C801	262382	52578	D737	59182	130555	J116	311912	73660	J17	129794	200914
C205	280924	46736	C621	13208	102870	C902	15494	132334	D740	199136	134874	J117	314198	73660	J170	316992	20828
C212	292354	9144	C622	39116	102870	C903	8890	132080	D745	191262	148844	J118	316484	73660	J171	78994	17018
C215	314960	14986	C623	47752	111506	CN1	262382	43688	D746	143256	178562	J119	319024	73660	J172	110998	16764
C221	284734	13462	C624	139700	83058	CN2	251714	56642	D752	51562	141732	J120	321310	73660	J173	208280	17526
C222	284734	7366	C624A	139954	82042	CN3	308102	190500	D753	189230	142494	J121	107696	58166	J174	279146	15748
C301	249682	51054	C625	139446	54102	D1001	130301	229997	D754	220472	171196	J122	157988	58420	J175	231140	117602
C302	240538	48006	C626	132842	53340	D1002	142290	229997	D798	183642	210820	J124	189738	70358	J176	237490	137668
C303	230378	30734	C627	109474	102616	D1010	260096	151892	D798A	185166	210820	J125	189738	67818	J177	231140	120142
C304	234696	34290	C628	101346	91948	D1017	114554	231394	DOBLE_	29210	50546	J126	200406	61214	J179	199644	94234
C308	223266	44450	C630	99314	96774	D204	316992	26670	F1	55372	210820	J127	200406	64516	J18	184912	206756
C309	227330	37846	C634	99568	21082	D205	316992	24130	F701	20066	163830	J128	200406	58674	J180	226314	92456
C311	233680	41402	C636	170688	71120	D306	258064	228092	F702	173736	175260	J129	202946	67818	J181	205232	79502
C312	246888	45212	C637	169926	59182	D309	311404	201168	F704	186436	138176	J13	235458	217424	J182	182372	113538
C316	215900	37338	C640	96012	103124	D508	184912	113538	FB301	178054	42672	J130	247142	63500	J183	237490	140208

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Component side

Ref No	Xum	Yum
J184	261365	107442
J185	261365	104902
J186	261365	102362
J187	261873	98552
J188	263652	135636
J189	263652	132588
J19	236728	206248
J190	263652	129540
J191	263652	127000
J193	184658	214376
J194	154686	45212
J195	188722	170180
J196	81026	196088
J197	199644	96774
J198	269748	57150
J199	304292	60452
J20	254000	209042
J200	304292	72898
J201	169926	109093
J202	103124	104394
J203	100584	104394
J204	172466	109093
J205	202438	99314
J206	236220	153162
J207	230632	159004
J208	248158	142748
J21	299212	197358
J22	301752	197358
J23	306324	207518
J24	258064	182880
J25	322072	187452
J27	170180	175260
J28	176784	175260
J29	188722	173228
J3	120396	225044
J30	294894	185674
J31	294894	183134
J32	58420	167894
J33	61468	167894
J34	64008	167894
J35	140208	158750
J37	204978	158242
J38	258826	175260
J39	258826	172720
J4	153670	229870
J40	258826	165100
J41	58420	156210
J42	102108	148590
J44	239522	160274
J46	260096	156972
J47	66040	137160
J48	186436	134874
J49	215138	149352
J5	157480	229870
J50	215138	146812
J51	289560	152908
J52	215138	139192
J53	215138	136652
J54	260096	148844
J55	260603	116332
J56	74930	105156
J57	77470	105156
J58	151638	101092
J59	154178	101092
J60	189992	110998
J61	192532	110998
J62	198120	110998
J63	207518	111760
J64	271780	101092
J65	274066	101092
J66	276352	101092
J67	278638	101092
J68	280924	101092
J69	283210	101092
J70	285750	101092
J71	288290	101092
J72	290576	101092
J73	293624	101092
J74	296164	101092
J76	301244	101092
J77	303784	101092
J78	306324	101092
J79	314452	118872
J80	310388	101092
J81	312928	101092
J82	158496	98552
J83	161036	97282
J84	164084	97282
J85	167132	97282
J86	180848	95758
J87	169926	94996
J88	249936	91948
J89	252476	91948
J90	315468	99822
J91	318008	99822
J92	320548	99822
J93	160528	88900
J94	160528	86360
J95	259842	84836
J96	70358	79756
J97	97790	70866
J98	189738	78994
J99	185928	76454
JF23	254762	143002
JF59	212344	109728
JF60	215646	117348
JF61	215646	119888
JF902	22098	133858
JL1	143256	108712
JL1.	153670	68834
L202	281686	28194
L203	289560	18542
L301	245872	91186
L302	269240	240030
L303	192786	218186
L315	254000	211582
L316	254254	206502
L318	295656	119634
L319	295656	115316
L350	257810	220218
L351	257302	216662
L352	303530	237744
L353	311658	222504
L501	231140	125476
L601	33274	109982
L602	33274	114046
L605	127000	85090
L605A	125730	85090
L606	40894	94488
L609	83058	83312
L701	55118	215138
L702	236728	208788
L705	275590	180086
LP701	37490	232943
M1000	98501	240461
MOD.DI	319786	75692
P1	74422	56388
P2	79756	144272
P3	98298	56896
P4	100076	172974
P5	117348	149352
P6	243840	180594
P7	139700	62738
P8	299974	154940
POR701	49276	184150
Q502	176022	110744
Q601	100330	56896
Q602	79502	56388
Q605	61468	82804
Q612	139700	67564
Q701	96012	172974
Q702	117348	145034
Q703	79756	140208
Q706	119126	231394
Q797	248412	169164
R1	67818	105156
R1009	78994	23622
R1024	298704	101092
R1036	133858	238760
R1045	260096	154432
R1046	260096	159512
R202	316992	34290
R203	316992	36830
R208	316230	59436
R213	309372	71120
R214	164084	83312
R215	110998	14224
R219	316992	29210
R220	316992	31750
R223	284734	27432
R301	250190	34544
R302	247650	34544
R303	202057	39878
R304	202057	37338
R337	235458	214376
R355	255524	228092
R358	313436	235966
R359	314198	210820
R387	304292	197358
R413	209296	27686
R414	299466	71374
R415	291846	71374
R416	294386	71374
R417	296926	71374
R423	205486	223012
R441	165354	45212
R501	236220	137668
R503	204978	111760
R505	187452	113538
R509	245110	108966
R518	201422	110998
R530	48514	100838
R553	244602	143510
R555	181102	104394
R601	188976	128524
R603	65531	104648
R606	58420	105410
R609	89154	75184
R611	195326	110998
R612	86360	61722
R614	25654	94488
R617	73914	7620
R618	121920	68326
R627	132080	71374
R640	181610	69342
R650	79248	11430
R651	54356	104648
R654	203962	74676
R657	109982	96774
R660	94742	10922
R666	162560	77470
R667	157226	54610
R7	273304	146558
R702	236474	190500
R704	279908	125222
R711	85090	172720
R714	92710	185928
R717	188722	175768
R718	62230	130301
R719	62992	147828
R721	134874	129540
R722	119126	138938
R723	105918	131063
R725	135382	135636
R728	79502	132334
R730	117348	208534
R733	281432	177038
R734	277368	157480
R738	188468	131826
R746	156210	185166
R747	163830	195834
R749	111252	151638
R755	35814	177546
R756	19558	135128
R757	24638	135128
R758	35306	131318
R759	207518	192024
R770	27940	211074
R772	222250	184658
R774	10922	211074
R776	258826	167640
R778	124968	136398
R779	88392	127508
R780	215138	144272
R787	103124	131318
R790	30226	135128
R795	180340	175260
R796	273304	150368
R797	273558	161290
R798	143510	182880
R799	111506	159258
REF10	53695	-4166
REF5	263398	203200
S701	20497	246888
S702	48514	238201
S703	60502	238201
S704	72517	238201
S705	84505	238201
SF201	293878	44196
SF202	279908	51816
T601	29210	50546
T701	159004	142748
T701A1	160274	140208
T702	127762	182372
T702B	127762	182372
TETON	189230	125984
TH201	304495	5486
VR701	84328	220472
X201	274066	40386
X301	215900	69342

F7351N1A Mother Unit PWB

Copper side

Ref No	Xum	Yum
C1023	295402	83058
C1043	250444	233172
C1044	245110	214376
C1045	312928	186182
C1046	314452	186182
C1049	124206	17018
C202	289560	41910
C203	288290	28702
C206	292354	34798
C207	274828	46736
C208	289560	43688
C209	269240	48260
C210	294132	52070
C211	307340	43434
C213	308610	22352
C214	310134	22352
C218	289560	38862
C219	289306	34798
C305	243840	51816
C306	248158	54864
C307	223266	44704
C310	230886	39116
C313	243332	62230
C314	191770	48768
C315	189992	48768
C321	214630	56134
C322	212344	61976
C323	219710	74422
C324	215392	73660
C325	215392	71882
C326	214884	68580
C327	216408	68580
C328	240792	66294
C329	225552	76454
C331	181102	26416
C3313	242062	51816
C333	177546	26670
C334	188722	34036
C336	181864	29464
C337	181610	13716
C338	189230	21336
C339	177800	14478
C340	187960	18034
C341	189230	24384
C342	186436	18034
C343	247904	12954
C344	257048	18034
C345	247904	14478
C346	254762	13716
C347	253238	27686
C348	252222	24892
C350	289306	228346
C353	288544	236728
C354	280670	230632
C357	273304	231394
C358	286004	229362
C359	277114	236728
C360	297942	239268
C364	306324	228600
C366	285242	211328
C367	289560	211328
C368	289560	219456
C369	289560	214122
C371	278892	211582
C373	296418	219456
C374	281686	212852
C375	305816	220726
C379	304038	212852
C380	233680	235966
C381	232791	232537
C382	250444	235712
C383	250444	229870
C384	250444	223774
C385	242316	220472
C386	240538	211074
C387	250444	226822
C390	171196	229108
C391	177800	229870
C392	252730	19050
C393	184404	39116
C394	176530	38608
C395	258064	22352
C403	160782	24638
C406	216408	217424
C412	139446	26924
C416	223266	226822
C432	139446	21590
C433	214884	22352
C502	234442	112268
C503	234442	107950
C505	227584	102362
C506	225298	107950
C507	234950	103378
C508	229108	102362
C510	215138	103124
C522	231648	111506
C525	251206	132334
C534	236728	101092
C540	172466	78486
C541	157988	88646
C604	64008	85344
C605	57912	77978
C606	88392	96520
C607	81026	90678
C608	84836	62230
C610	61214	61722
C612	90424	63754
C629	171958	69342
C631	101346	89154
C632	163068	80264
C633	168910	66294
C635	160782	64008
C641	14986	102870
C708	163830	137668
C714	52832	188468
C715	152654	160528
C716	54610	134874
C718	86868	133858
C719	152146	165862
C722	201168	171196
C723	128016	135382
C724	150368	165862
C731	241300	179578
C736	218694	152908
C739	283718	170180
C740	230632	151384
C741	280416	143510
C743	293878	154432
C749	211582	152146
C754	62992	161036
C755	60452	155702
C756	66040	161036
C901	12954	140462
C904	34036	163322
C905	9398	140462
D1011	267970	153924
D1018	110744	17272
D1019	130301	27940
D1020	130301	30226
D1021	131572	34290
D201	289814	47498
D202	289814	49530
D203	289814	51562
D302	249174	50546
D303	239776	49530
D304	237744	30734
D305	239014	36830
D307	189738	224028
D308	189738	221742
D402	150876	35052
D403	149606	23368
D404	151384	13462
D405	217424	17272
D406	221996	23114
D407	241300	23114
D408	235458	23114
D409	227838	23114
D410	224282	18034
D411	167132	13462
D420	161036	13462
D421	166116	24638
D422	233934	13716
D423	241554	12446
D424	257810	12954
D425	173482	18542
D426	186563	13589
D427	147574	29464
D429	188468	29210
D430	171958	24638
D431	259588	20574
D432	248412	19050
D433	186182	24638
D434	178308	23114
D435	184404	35306
D436	178308	35306
D437	251460	12954
D438	179832	18542
D439	177546	30734
D507	199898	108712
D511	202438	114808
D512	160528	109220
D604	98806	70866
D615	234950	82804
D616	101854	93726
D622	136906	59182
D623	132080	55626
D624	101854	91440
D625	106426	91694
D631	174244	82042
D633	176530	82042
D634	18288	117856
D635	7620	100330
D636	172212	74930
D639	110744	14986
D640	110744	12700
D641	143764	61468
D642	142240	56896
D643	132080	14224
D644	86614	89408
D707	43688	164846
D708	82042	137414
D713	92202	130048
D714	41402	153670
D715	80518	176530
D716	54864	153670
D723	231648	41148
D725	84836	137414
D730	138176	137922
D731	131572	137922
D732	92456	134112
D733	105664	138938
D741	46228	160020
D743	147320	172466
D747	194056	181610
D748	172974	175006
D750	195072	166624
D901	7112	139446
D902	12954	131063
IC201	281432	40640
IC303	227584	59436
IC502	235458	130301
IC503	228092	130301
IC601	163068	69342
IC701	53340	166878
IC709	34798	169672
J111	267716	72898
J12	205994	221742
J146	264414	52578
J15	240538	220472
J150	134874	32512
J165	142240	29718
J192	163830	62484
J2	264414	236728
J36	154940	166878
J6	205994	226060
J7	209296	229362
J8	207772	226060
J9	211074	226060
JF10	289560	45466
JF1001	47244	10414
JF1002	45466	10414
JF1003	43942	10414
JF1004	42164	10414
JF1005	40640	10414
JF1006	38862	10414
JF1007	37084	10414
JF1008	35306	10414
JF1009	33528	10414
JF1010	31750	10414
JF1011	29972	10414
JF1012	28194	10414
JF1013	10414	32765
JF1014	10414	35560
JF1015	10414	38354
JF1016	10414	40894
JF11	319786	185166
JF151	134874	234442
JF153	102108	228600
JF22	289814	51562
JF24	145288	11176
JF28	259588	27432
JF29	171450	222758
JF4	318262	185166
JF5	308356	46482
JF54	261873	52578
JF55	101600	239014
JF56	81788	240284
JF58	96266	239522
JF6	300228	34544
JF62	306832	82042
JF63	110744	12700
JF7	300228	30480
JF8	308610	29210
JF9	301752	16510
JF901	17018	145796
L205	301498	48514
Q1002	131597	234442
Q1003	140462	234188
Q1004	251714	153416
Q1010	269240	148082
Q1011	269494	141732
Q201	270002	34798
Q202	313182	51816
Q305	262382	224282
Q306	255016	212090
Q403	269240	30480
Q406	159258	40640
Q407	167132	41656
Q503	168148	109474
Q505	191516	109728
Q603	90932	55118
Q604	91186	50800
Q606	240538	86106
Q607	85344	92710
Q608	86360	52832
Q609	133350	59436
Q611	173228	64516
Q613	75438	89408
Q614	132080	50038
Q704	40894	157734
Q705	49784	159766
Q707	45720	190246
Q708	199644	181610
Q709	203708	179070
Q710	272288	167640
Q712	56134	159766

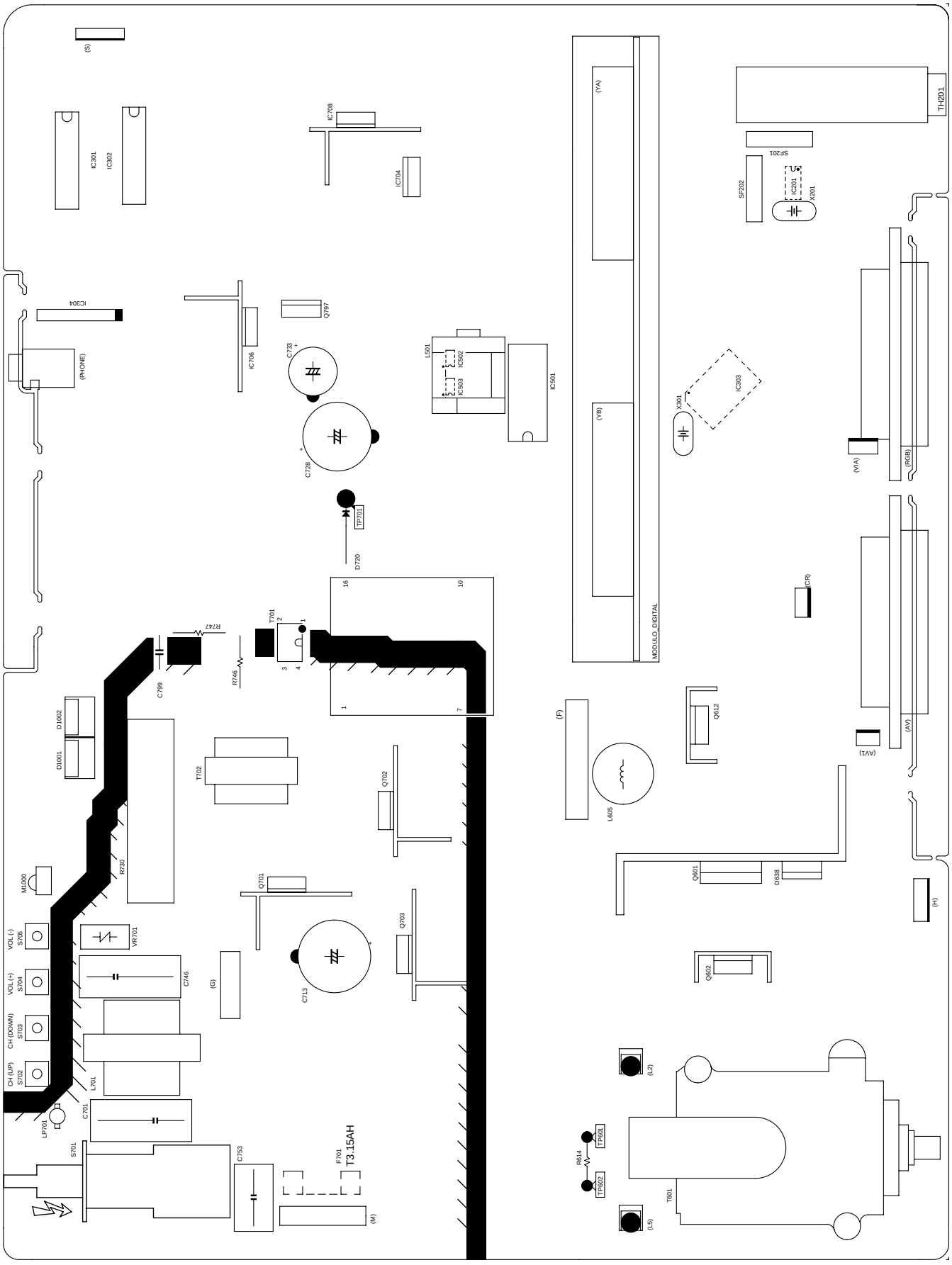
F7351N1A Mother Unit PWB

Copper side

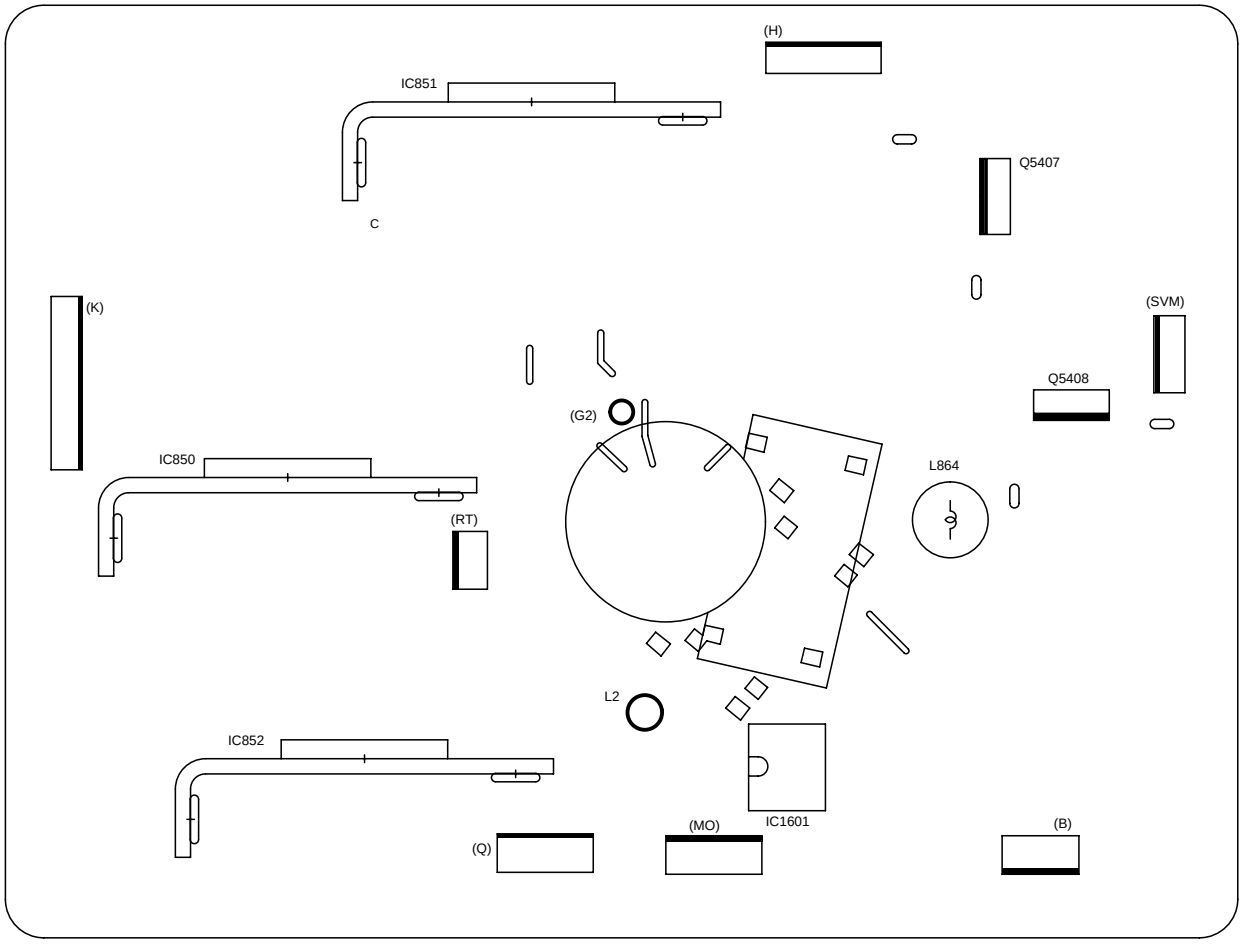
Ref No	Xum	Yum
Q713	150876	170180
Q714	152654	174244
Q720	39878	166624
Q721	44704	170180
Q723	125222	135890
Q724	86614	129540
Q796	240792	169164
Q901	12192	145796
Q902	16002	139954
R1010	126238	17018
R1013	128524	234188
R1014	136398	228346
R1015	136398	230378
R1017	103632	228600
R1019	104902	237236
R1025	295656	154432
R1026	300482	150368
R1030	55118	237998
R1031	60452	237998
R1032	72644	237998
R1037	145542	234188
R1039	258572	149860
R1042	101600	240538
R1044	248412	153416
R1047	269494	144780
R1049	122428	17018
R1050	140462	32765
R1051	251460	150622
R1053	53594	237998
R1055	87630	240538
R1099	105156	228600
R201	271780	46736
R204	281178	49022
R205	264668	48006
R206	290830	34798
R207	273304	46736
R209	271526	52070
R210	268224	51054
R211	271526	50292
R212	295148	55880
R217	307594	32512
R221	310896	48768
R222	313690	54610
R225	309626	32512
R230	275082	35306
R231	265176	33274
R240	311150	39624
R305	193040	28956
R306	195072	28956
R307	252222	68326
R308	239776	71628
R309	230124	72898
R310	216662	37846
R311	220980	39624
R312	220472	46482
R313	213360	39370
R314	176530	24892
R316	191008	32258
R318	177800	12954
R319	183134	23368
R320	187198	15748
R321	189230	22860
R322	245364	13462
R323	257048	16510
R324	255778	24892
R325	248666	24892
R326	254000	24892
R327	250444	24892
R328	240030	227076
R329	235204	227076
R330	241554	227076
R331	241554	232156
R332	245364	218948
R333	250444	231394
R334	250444	222250
R335	250444	228346
R336	250444	225298
R338	169672	225806
R339	181864	223012
R341	178054	38608
R343	185928	39116
R350	254762	228346
R351	265176	230124
R352	280670	232156
R353	292354	239268
R356	285242	214122
R357	309118	218694
R360	316484	202692
R362	257302	208026
R369	237490	74930
R370	230124	74422
R374	276606	211582
R375	275082	231394
R380	308356	201676
R382	268478	231648
R384	253746	208026
R385	255524	208026
R405	147574	16764
R406	161544	36830
R407	160782	22860
R408	168656	18542
R409	171958	13462
R410	229616	13208
R411	237744	12954
R412	219456	18542
R418	242316	19558
R419	234696	19812
R420	227126	19812
R421	229108	18034
R422	272288	30480
R424	291084	80772
R425	150876	26162
R426	156210	36830
R427	171958	34798
R428	171958	31242
R436	220472	228600
R437	166370	37846
R438	166370	36322
R439	162306	40640
R440	163830	40640
R451	145796	16764
R452	215392	16510
R453	146558	25654
R502	251206	134112
R504	194564	109982
R506	196088	109982
R510	234442	109474
R511	231648	101600
R512	244602	132842
R513	243078	129286
R514	220472	127762
R515	246126	129286
R516	230886	141224
R526	222250	127762
R531	162814	87884
R534	244094	126746
R535	251206	128524
R536	247650	132842
R537	246126	132842
R544	244602	129286
R545	251206	130301
R548	251206	126746
R549	247650	129286
R554	162814	89916
R604	82296	95250
R605	166370	98806
R607	91440	57912
R608	87630	49022
R610	90678	46990
R616	81788	61214
R620	86614	62230
R621	109728	102362
R622	237236	86106
R623	88392	92710
R626	139446	53848
R628	134112	65024
R629	123698	50546
R630	128778	49530
R631	123698	56388
R632	160782	62484
R633	171958	67818
R634	167386	66294
R635	163068	82042
R637	160782	60960
R638	164846	96012
R639	163576	77216
R641	170688	71882
R643	159766	88646
R644	172466	76962
R645	33782	97536
R653	13716	116332
R655	167386	62484
R656	240030	83312
R658	99314	97028
R659	165354	62484
R661	100330	7620
R662	134366	14224
R664	135128	50038
R665	136906	50038
R669	85598	95504
R670	80518	95250
R700	148590	165862
R701	44704	156210
R703	48514	154686
R705	59690	175514
R706	74422	179324
R707	116586	233680
R708	67310	179324
R709	74676	157226
R710	71882	153162
R712	62230	175768
R713	127762	184404
R715	60452	157226
R716	60960	153162
R726	88646	133858
R727	50800	134874
R729	79756	140970
R731	122682	132080
R732	152654	162306
R735	284988	176276
R736	287528	170180
R737	198120	168148
R739	168910	173990
R740	178816	175006
R741	196088	171196
R742	211582	167894
R743	205486	170434
R744	202692	174752
R745	201168	174752
R748	44196	159004
R750	44450	172974
R751	60452	160274
R752	41148	162306
R753	37846	162306
R754	48514	156210
R760	159004	85598
R761	279908	167386
R764	192786	177800
R765	192786	179324
R766	204216	174752
R767	205486	182626
R768	146812	165862
R771	283464	176276
R773	64516	161036
R775	248920	169164
R777	276606	167386
R781	52578	134874
R782	60452	158750
R783	65531	175514
R784	70866	175260
R785	53086	173228
R786	52832	159766
R788	51562	173228
R789	54610	173228
R791	149606	177292
R792	152400	180086
R793	153162	177292
R794	268478	167640
R901	19558	133858
R902	15494	145796
R903	7874	144780
R904	7874	146558
R905	11176	140462
R906	12192	137414
R907	12192	134874
R908	10922	131572

CHASSIS LAYOUT

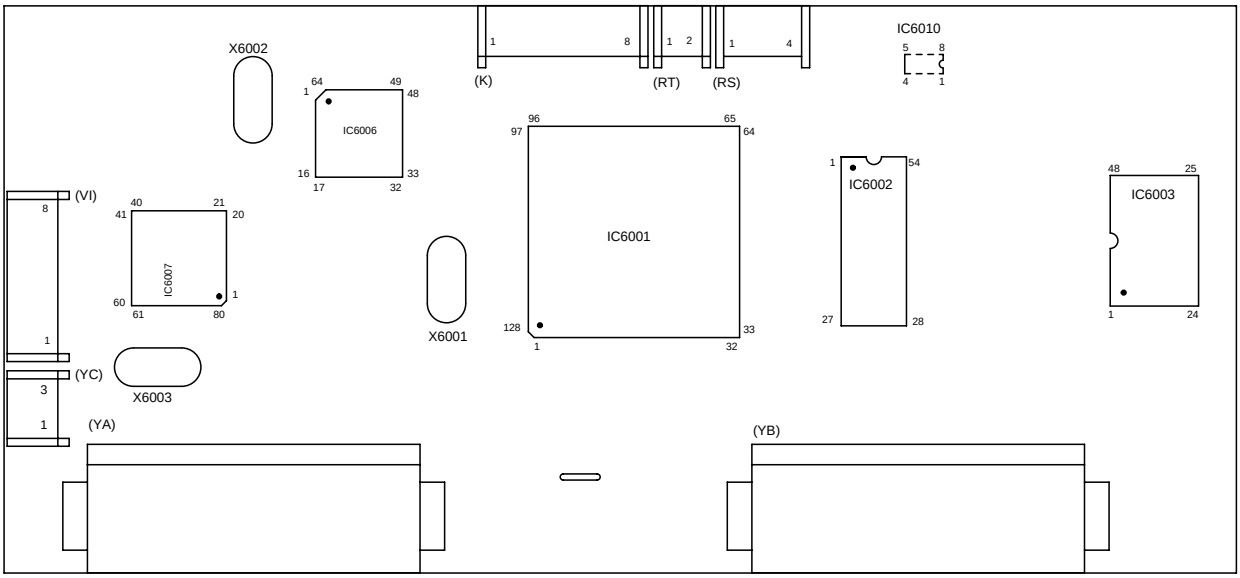
PWB A- Mother Unit, F7351N1



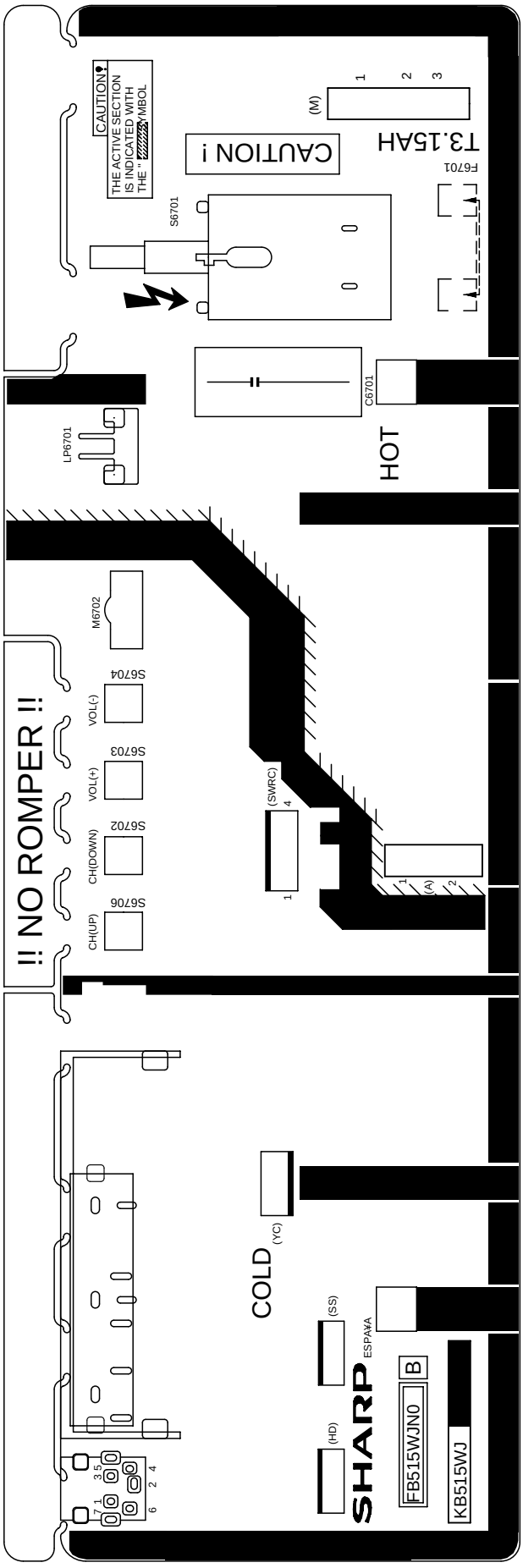
PWB B- CRT Socket Unit, F7269N3



PWB C- Digital Module Unit, F7359N2



PWB D- Power Switch Unit, FB515N0



SCHEMATIC DIAGRAMS

Description:

SAFETY NOTE:
1. DISCONNECT THE AC PLUG FROM THE AC OUTLET BEFORE REPLACING PARTS.

2. SEMICONDUCTOR HEAT SINKS SHOULD BE REGARDED AS POTENTIAL SHOCK HAZARDS WHEN THE CHASSIS IS OPERATING.

NOTE:
1. The unit of resistance « ohm »is omitted (K=1000 ohms. M= Megaohm).
2. All resistors are 1/8 watt. unless otherwise noted.
3. All capacitors are μF, unless otherwise noted (P= μμF).

IMPORTANT SAFETY NOTE:

PARTS MARKED WITH « ⚠ » ( ) ARE IMPORTANT FOR MAINTAINING THE SAFETY OF THE SET. BE SURE TO REPLACE THESE PARTS WITH SPECIFIED ONES FOR MAINTAINING THE SAFETY AND PERFORMANCE OF THE SET.

SERVICE PRECAUTION:

THE AREA ENCLOSED BY THIS LINE (–•–•–) IS DIRECTLY CONNECTED WITH AC MAINS VOLTAGE. WHEN SERVICING THE AREA, CONNECT AN ISOLATING TRANSFORMER BETWEEN TV RECEIVER AND AC LINE TO ELIMINATE HAZARD OF ELECTRIC SHOCK.

CAUTION
This circuit diagram is original one, therefore there may be slight difference from yours.

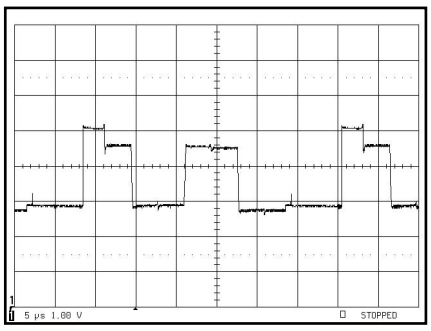
Waveform Measurement Condition

1. Test Equipment: Digital Oscilloscope; Colour TV Pattern Generator

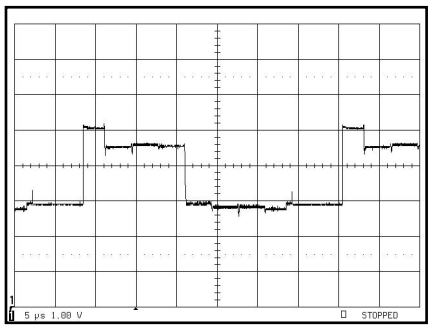
2. Test Conditions: CH-12; Colour Bars; 70dB/μV From RF Input

3. TV Condition: Picture and Audio : Settings → Factory Presets (Only in Audio Measures: Max. Volume With Unplugged Speakers)

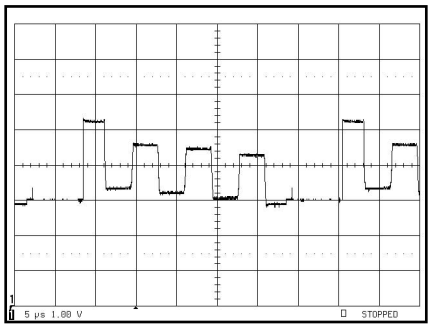
Waveforms



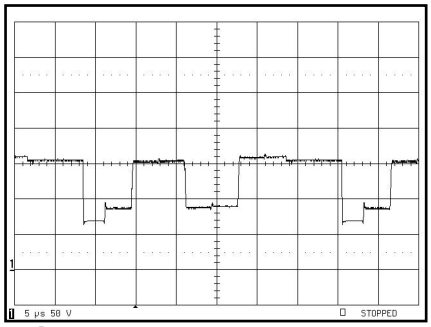
(1) Red In



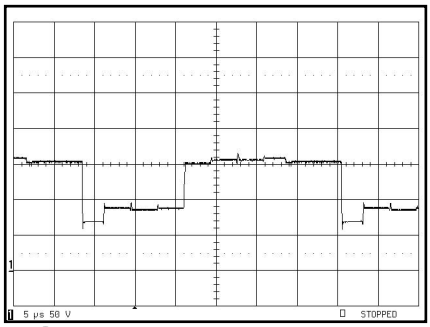
(2) Green In



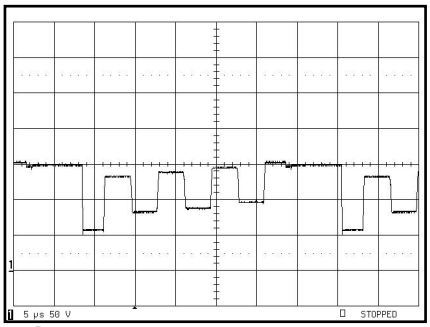
(3) Blue In



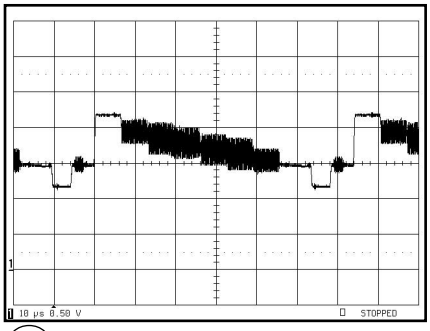
4 Red Output



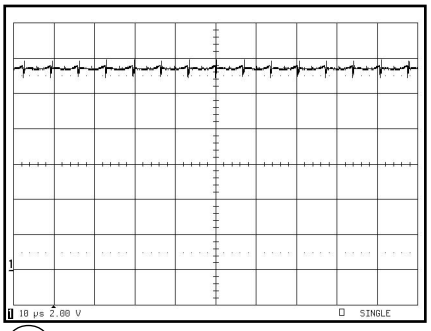
5 Green Output



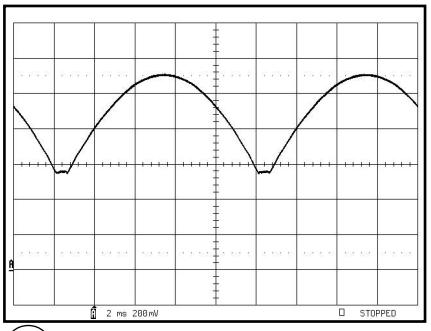
6 Blue Output



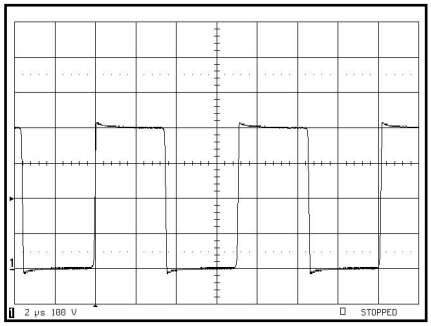
7 Video Output



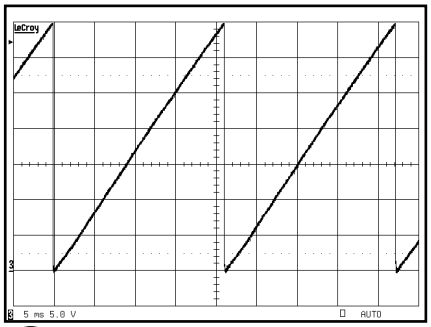
8 +12V



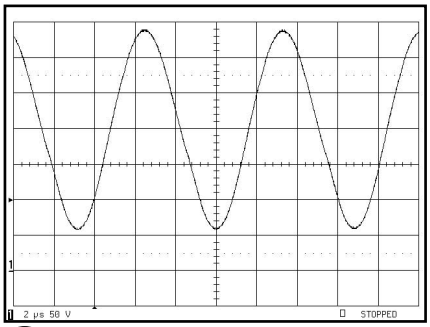
9 E-W Output



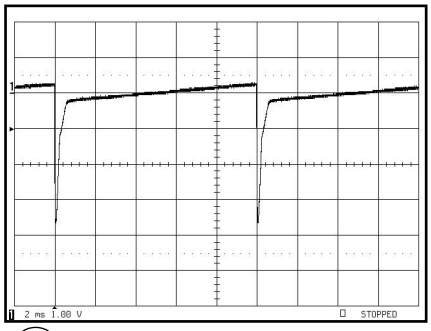
10 V Switch



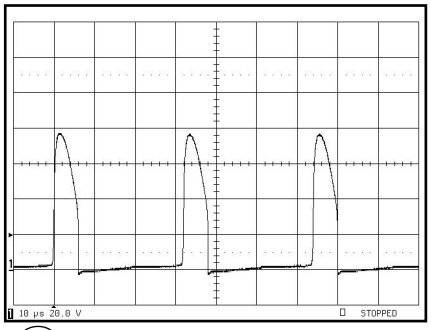
11 V Control St-By



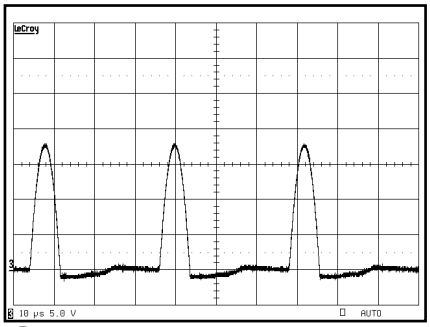
12 Vp



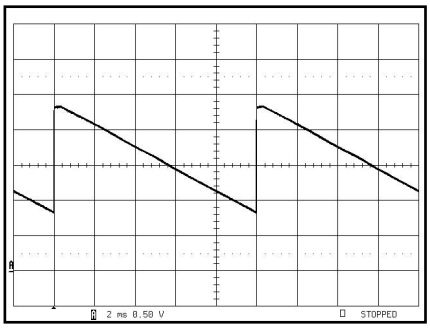
13 Vertical Input



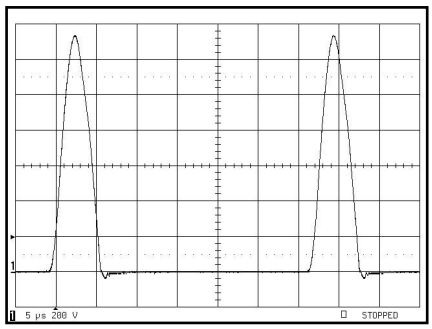
14 E-W Control 2



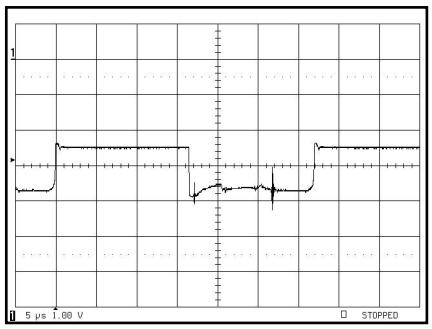
15 Inner Correction



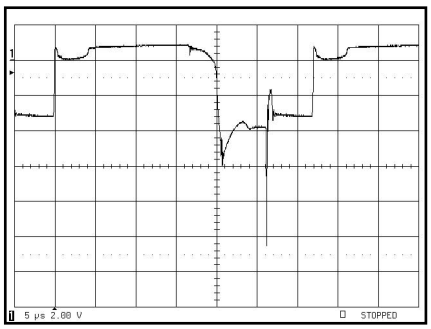
16 Vertical+Input



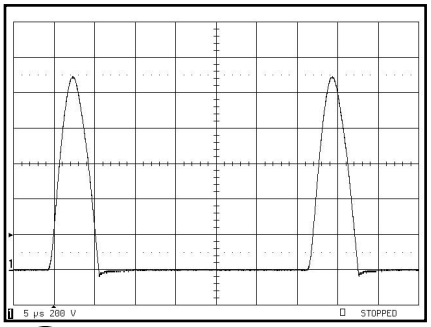
17 VH (1.2kV)



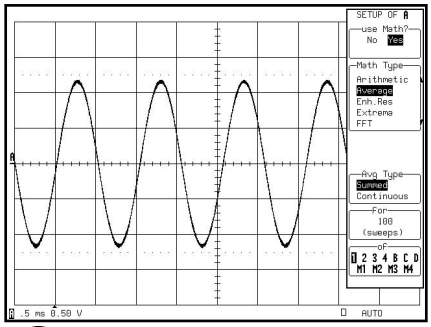
18 H Control



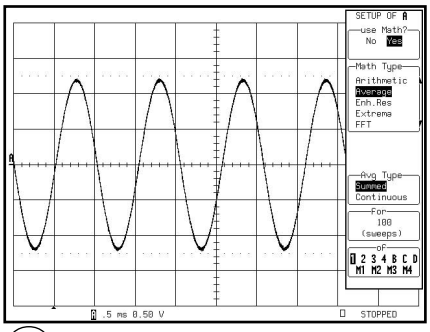
19 Vb (Horizontal)



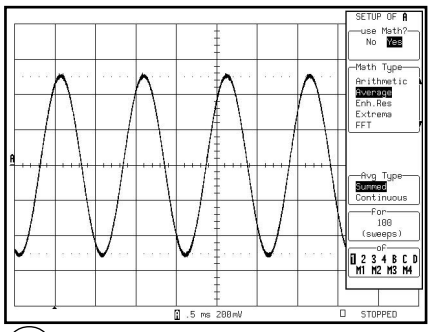
20 Vc (Horizontal)



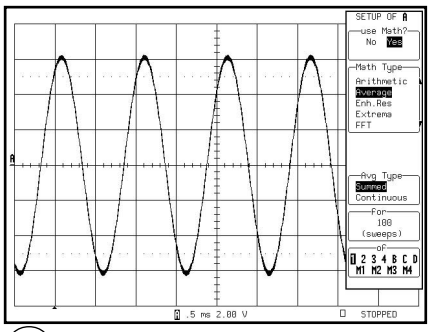
21 Headphone L Input



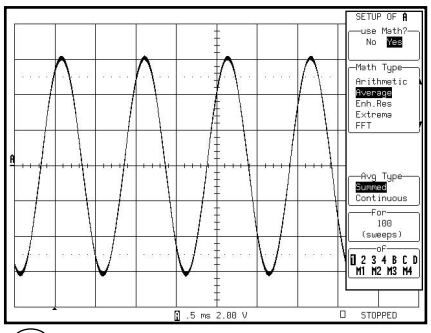
22 Headphone R Input



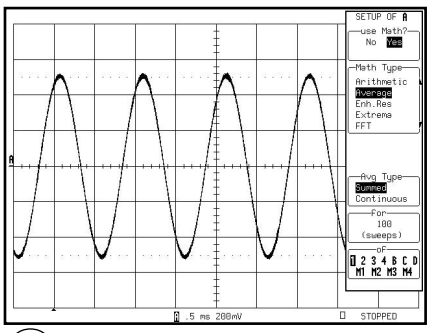
23 Speaker L Input



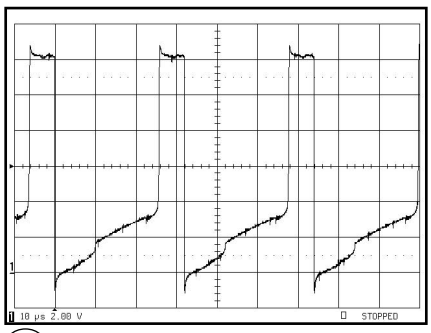
24 Speaker L Output



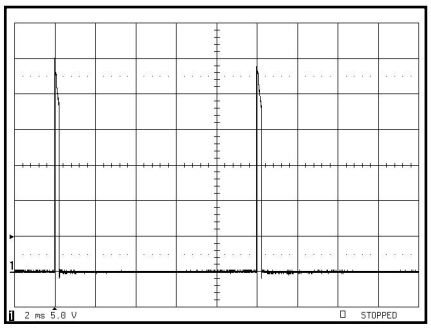
25 Speaker R Output



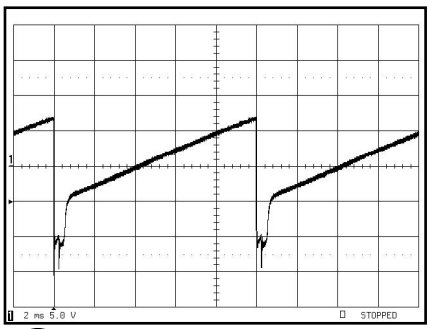
26 Speaker R Input



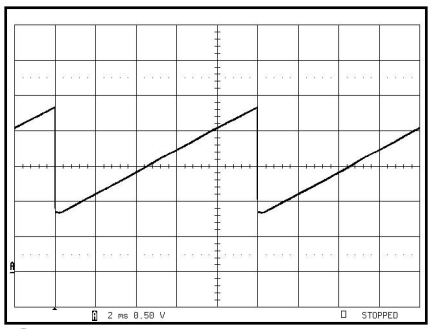
27 E-W Control 1



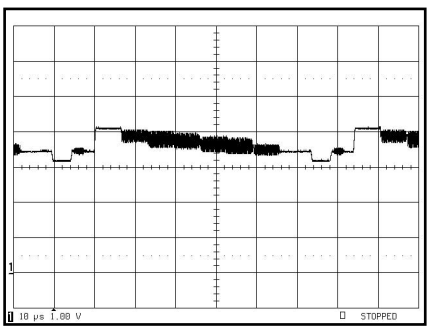
28 V Flyback Vertical



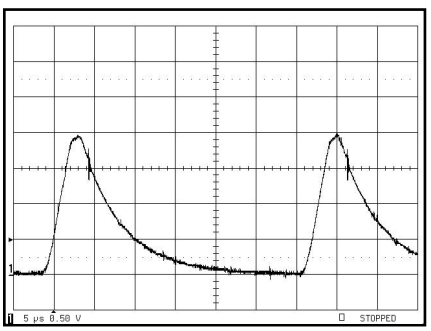
29 Vertical Output



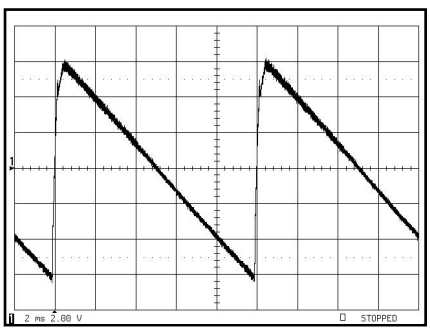
30 Vertical - Input



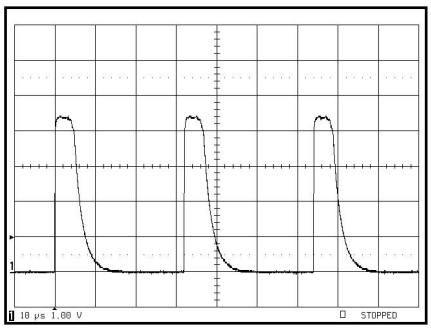
31 IF Video Output



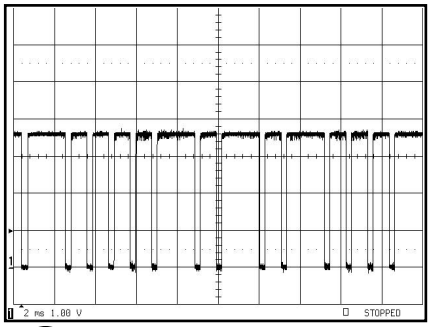
32 H Protection



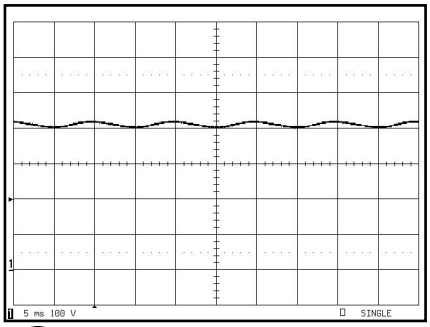
33 V Protection



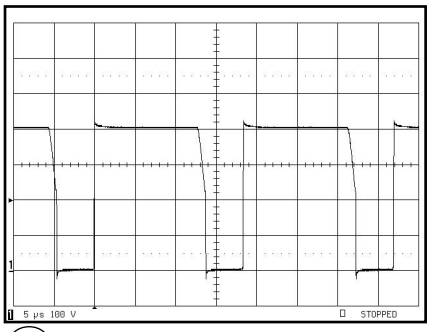
34 H Flyback Pulse



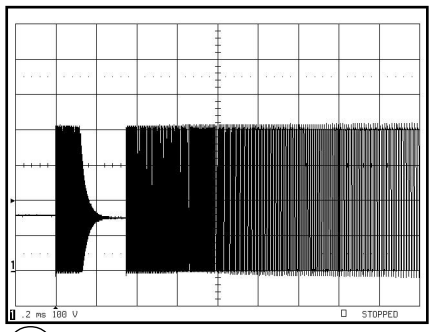
35 R/C Pulses



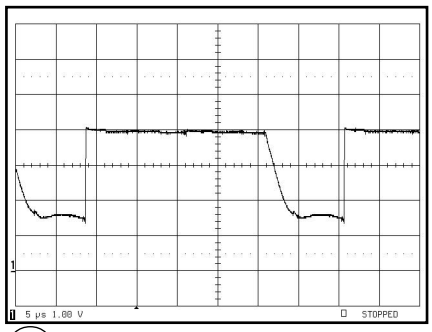
36 +400V (Power Supply Voltage)



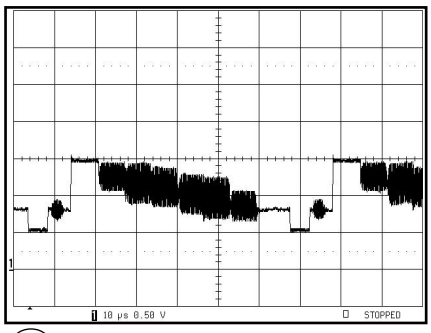
37 Power Supply Switch Voltage 1



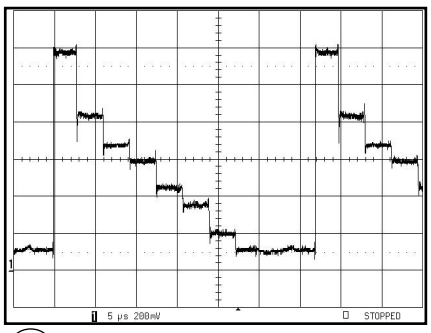
38 Power Supply Switch Voltage 2



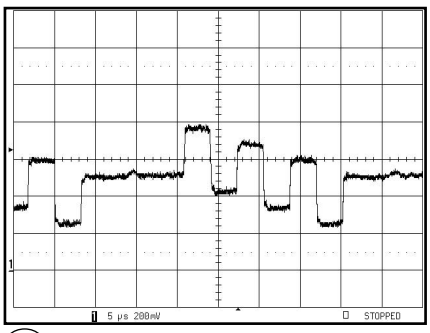
39 I Sense CRT



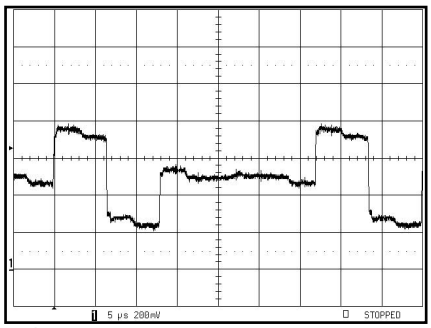
40 IF Video In



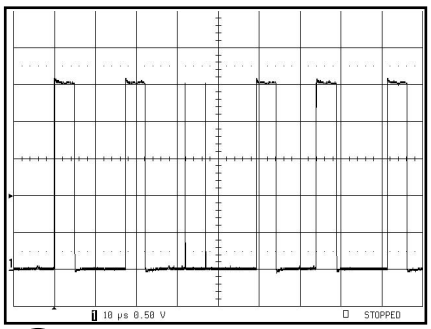
41 Analog Y Out



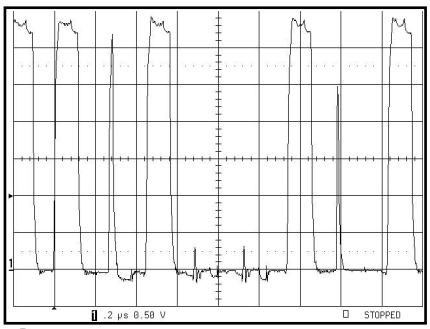
42 Analog U Out



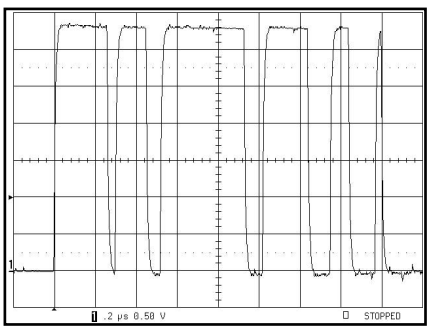
43 Analog V Out



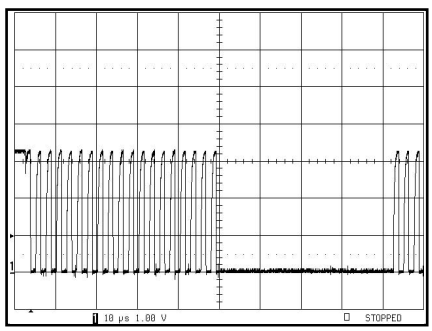
44 OSD Blanking



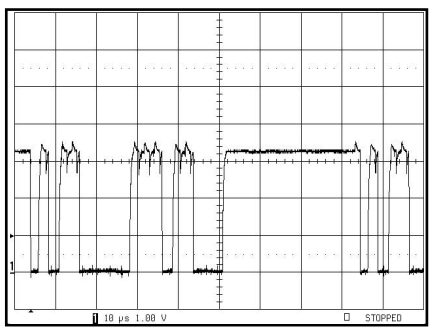
45 M2 Data D3



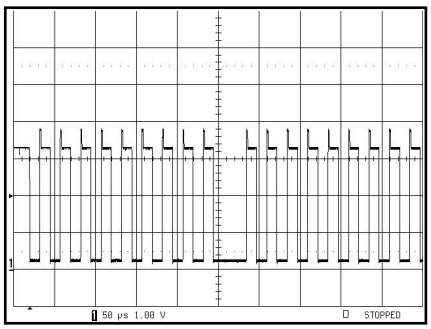
46 M2 Address A3



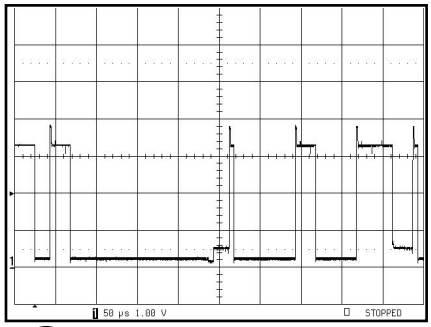
47 SCL2



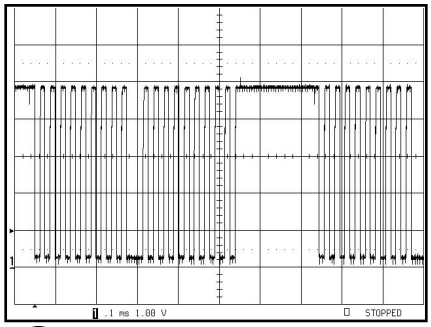
48 SDA2



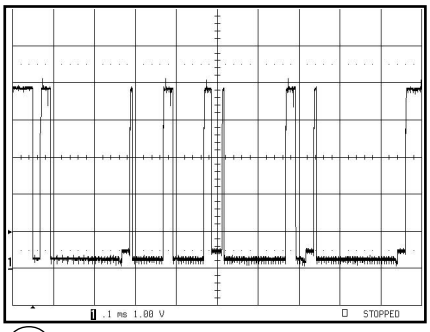
49 SCL at M2 pins



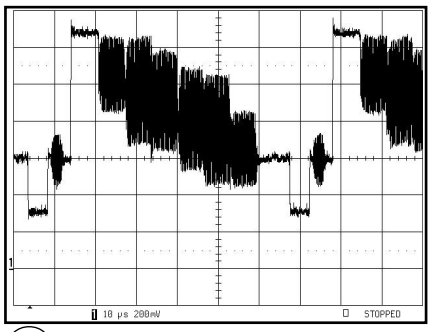
50 SDA at M2 pins



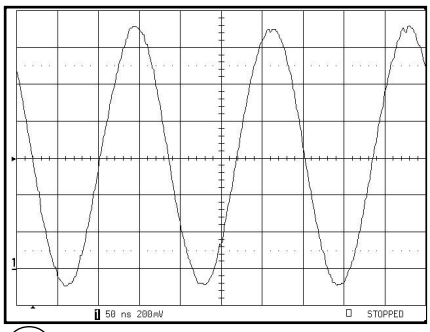
51 SCL 1



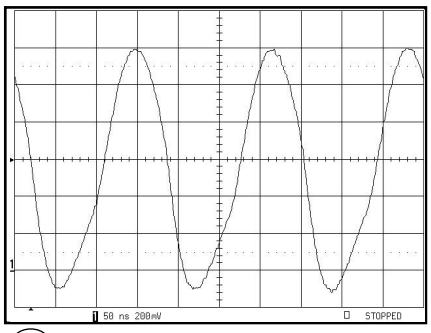
52 SDA 1



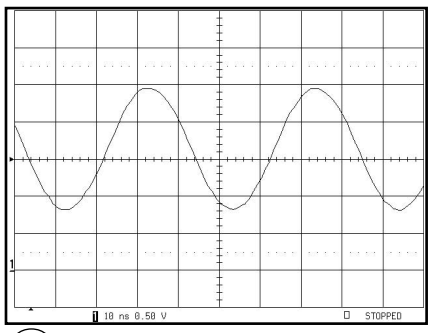
53 M2 video In



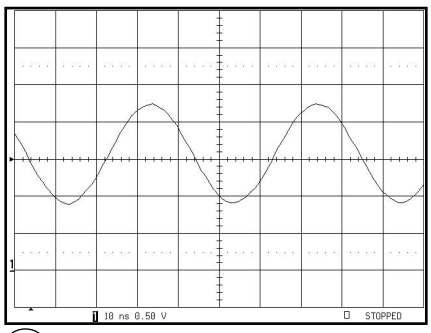
54 M2 6 MHz Xtal Input



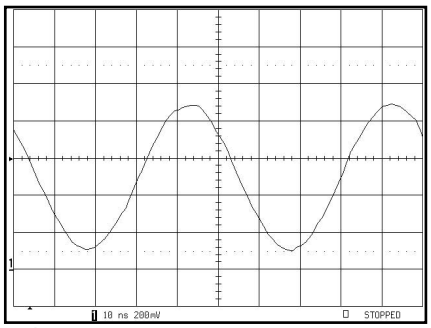
55 M2 6MHz Xtal Output



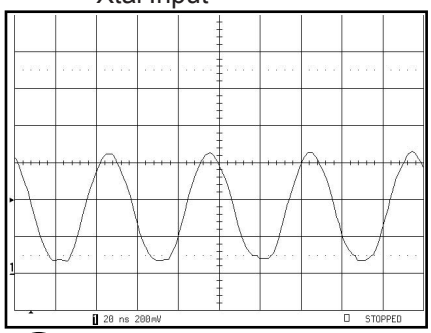
56 SDA9380 24.576 MHz Xtal Input



57 SDA9380 24.576 MHz Xtal Output

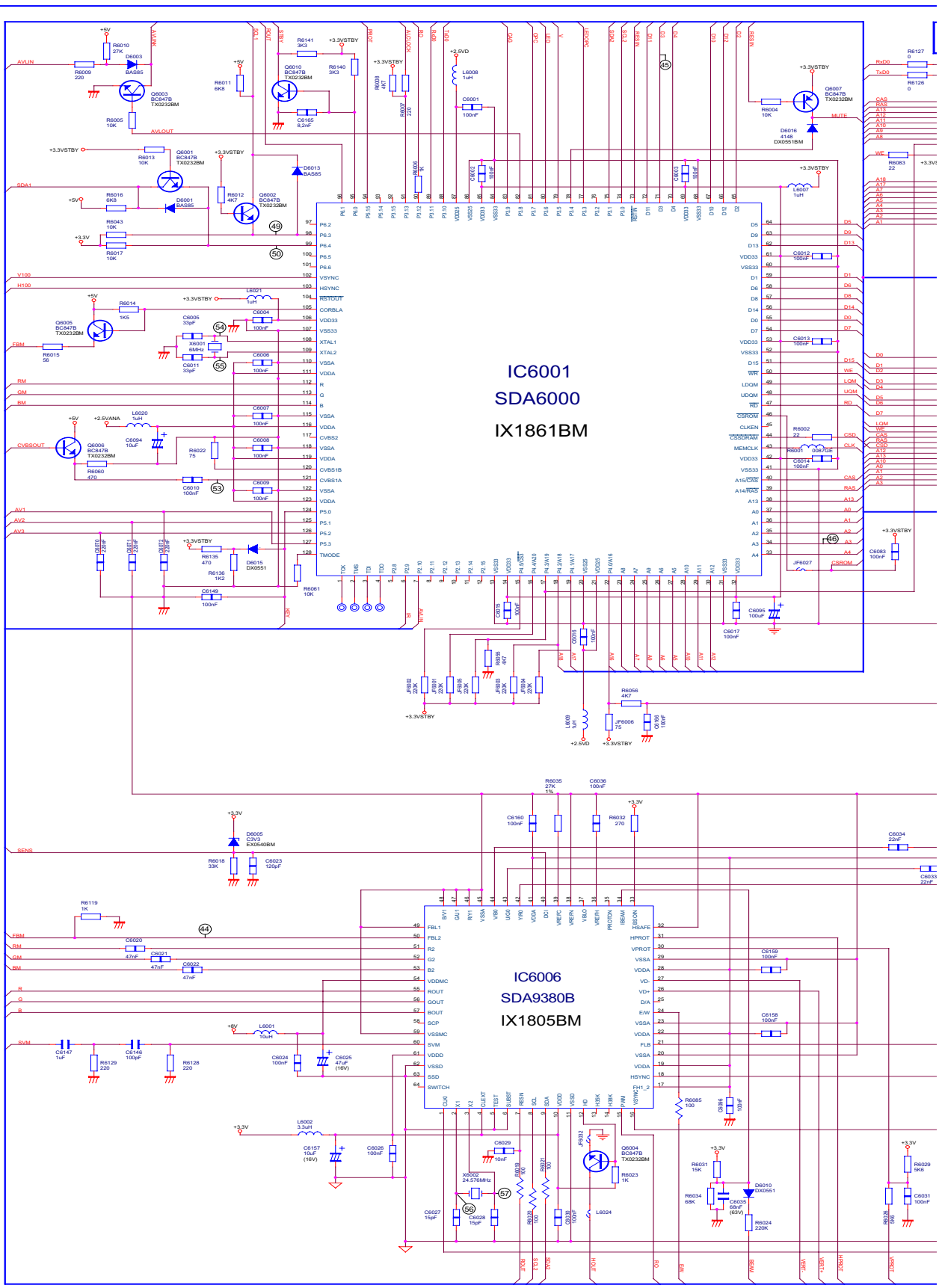


58 VSP9407 20.25 MHz Xtal Input

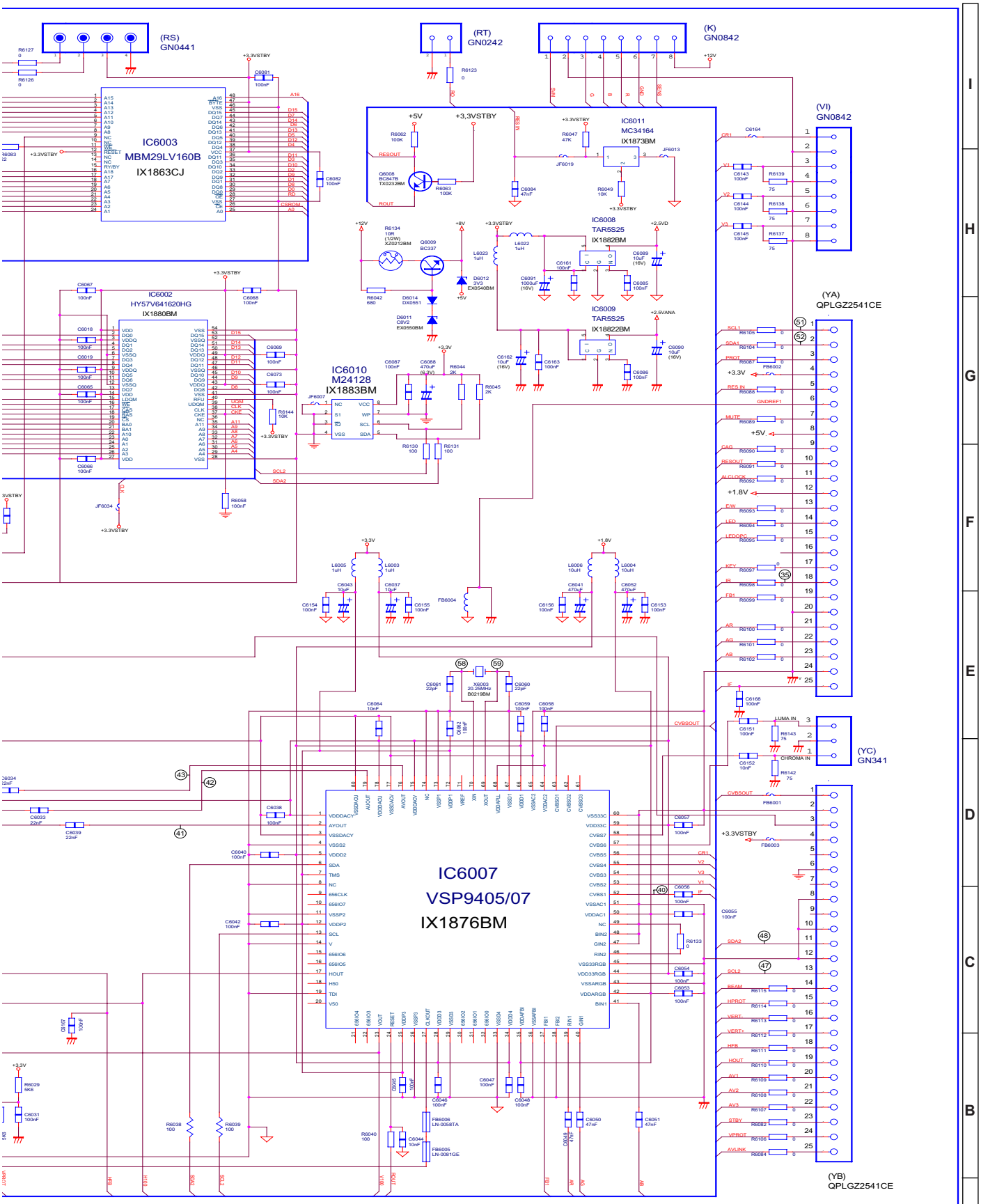


59 VSP9407 20.25 MHz Xtal Output

Schematic Diagram of Digital Module Unit (F7359N2)



Schematic Diagram of Digital Module Unit (F7359N2)



REALIZADO	VERIFICADO	APROBADO	NOMBRE	CODIGO
			GA200 DIGITAL MODULE	Q P W B F 7 3 5 9 B M N 2
			FECHA 03-10-2002	ESCALA A-2
			MODELO 28JW76E 32JW76E	SHARP ELECTRONICA ESPANA S.A.

N	FECHA	REVISIONES
6	26-09-2002	Hasta INFO 248
5	04-09-2002	Hasta INFO 230
4	07-08-2002	Hasta INFO 210
3	05-08-2002	Hasta INFO 204
2	26-07-2002	Hasta INFO 194
1	25-07-2002	Hasta INFO 193

Schematic Diagram of Mother Board Unit (F7351N1A)

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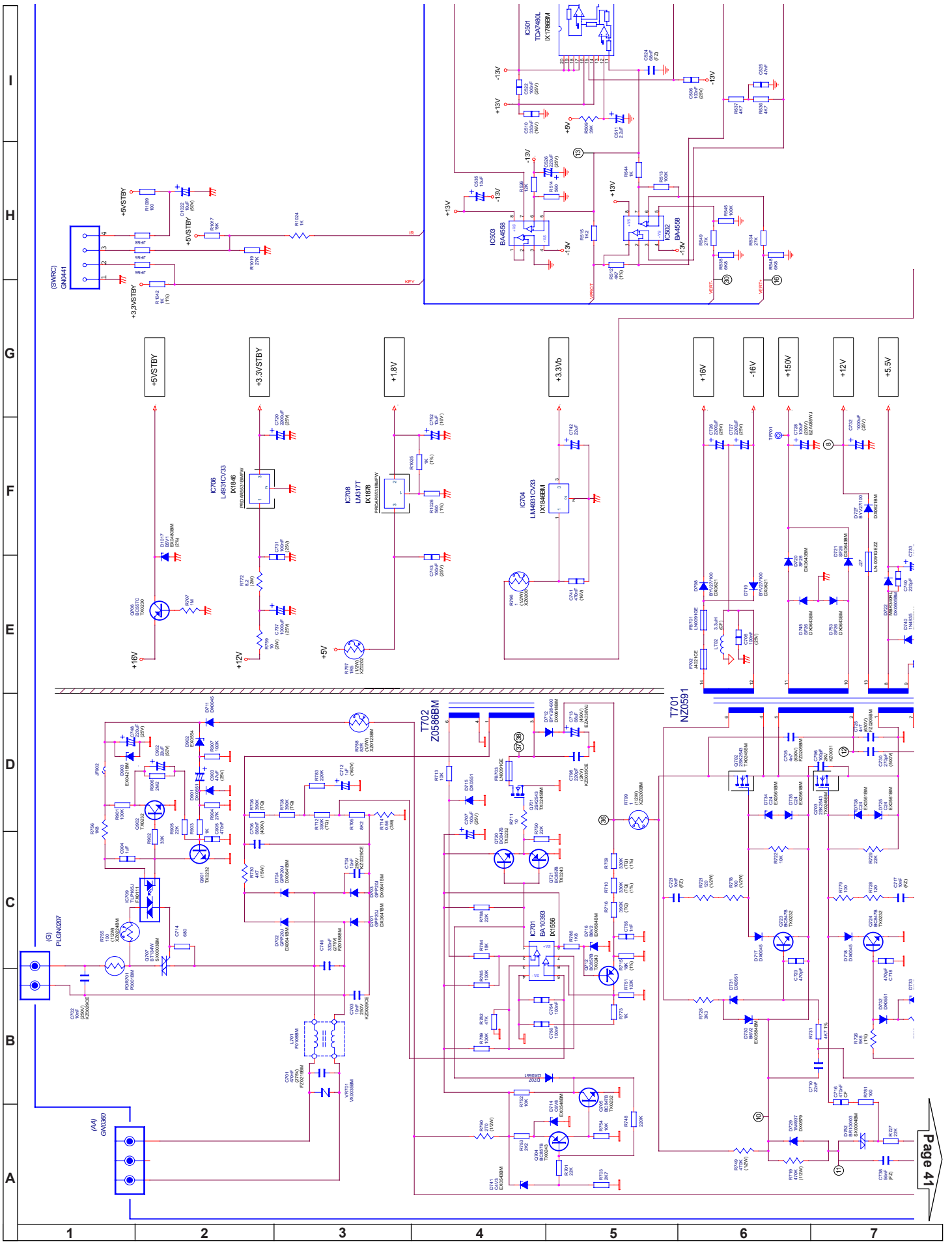

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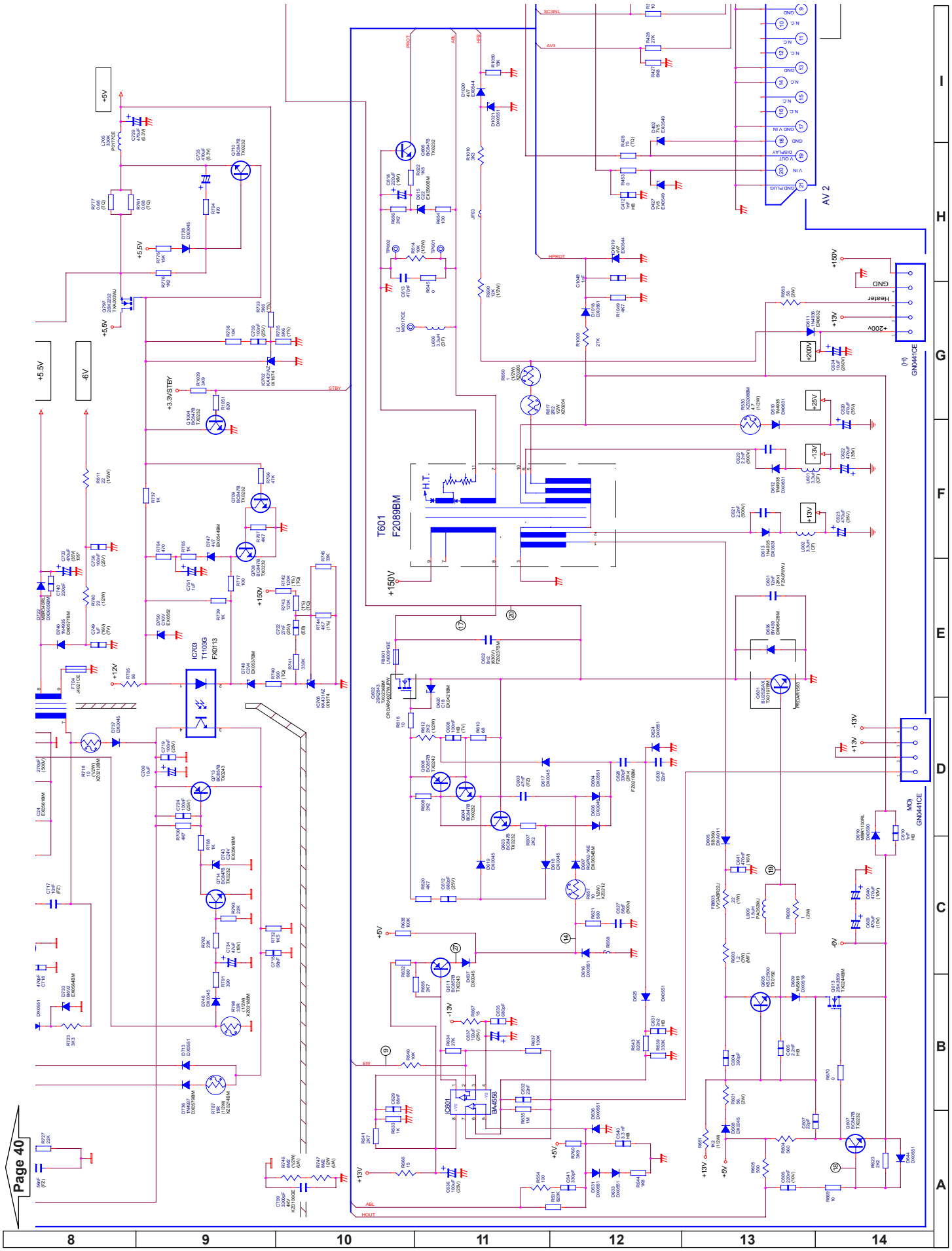
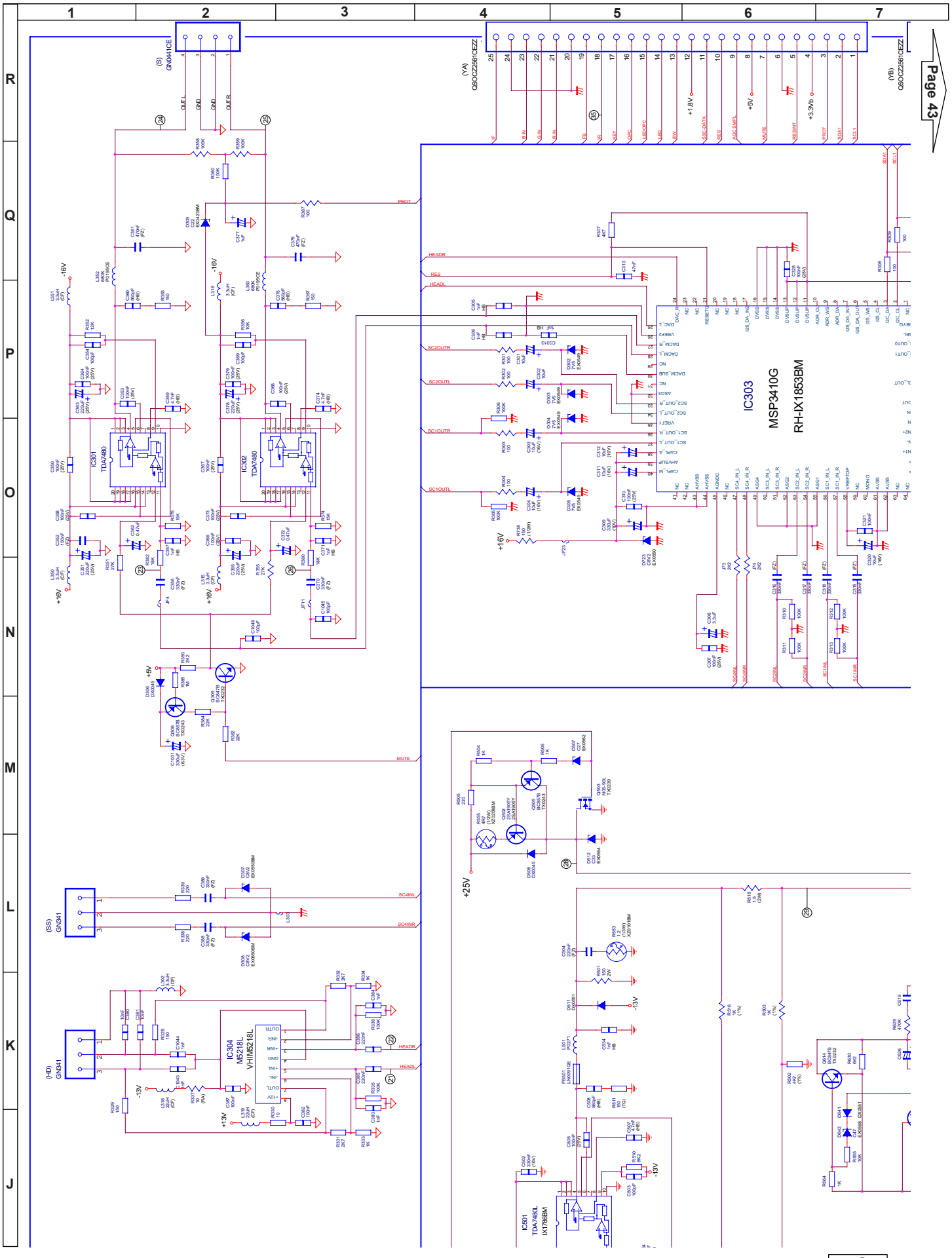
Schematic Diagram of Mother Board Unit (F7351N1A)

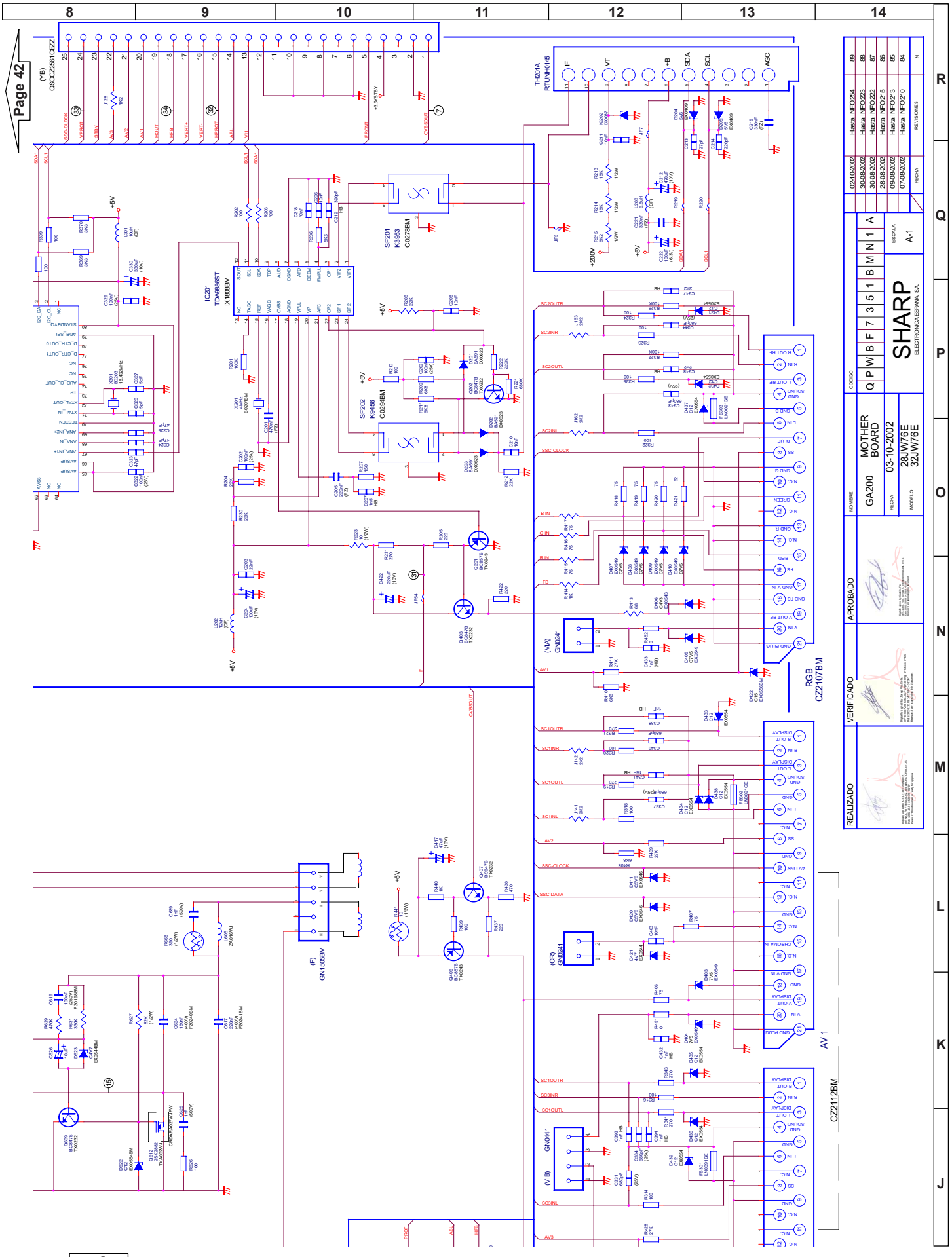


Page 40

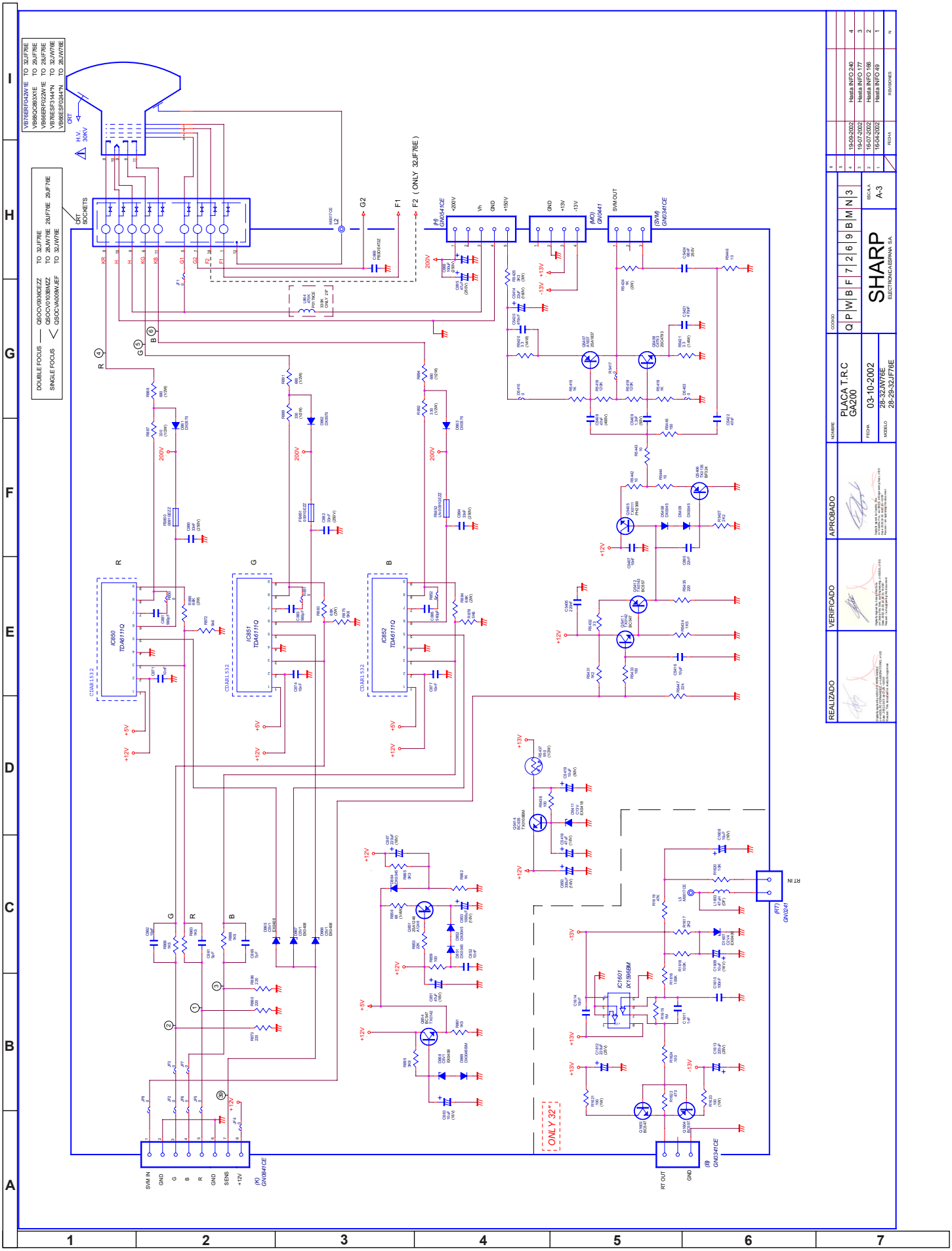
SCHEMATIC DIAGRAM OF MOTHER BOARD UNIT (F7351N1A)



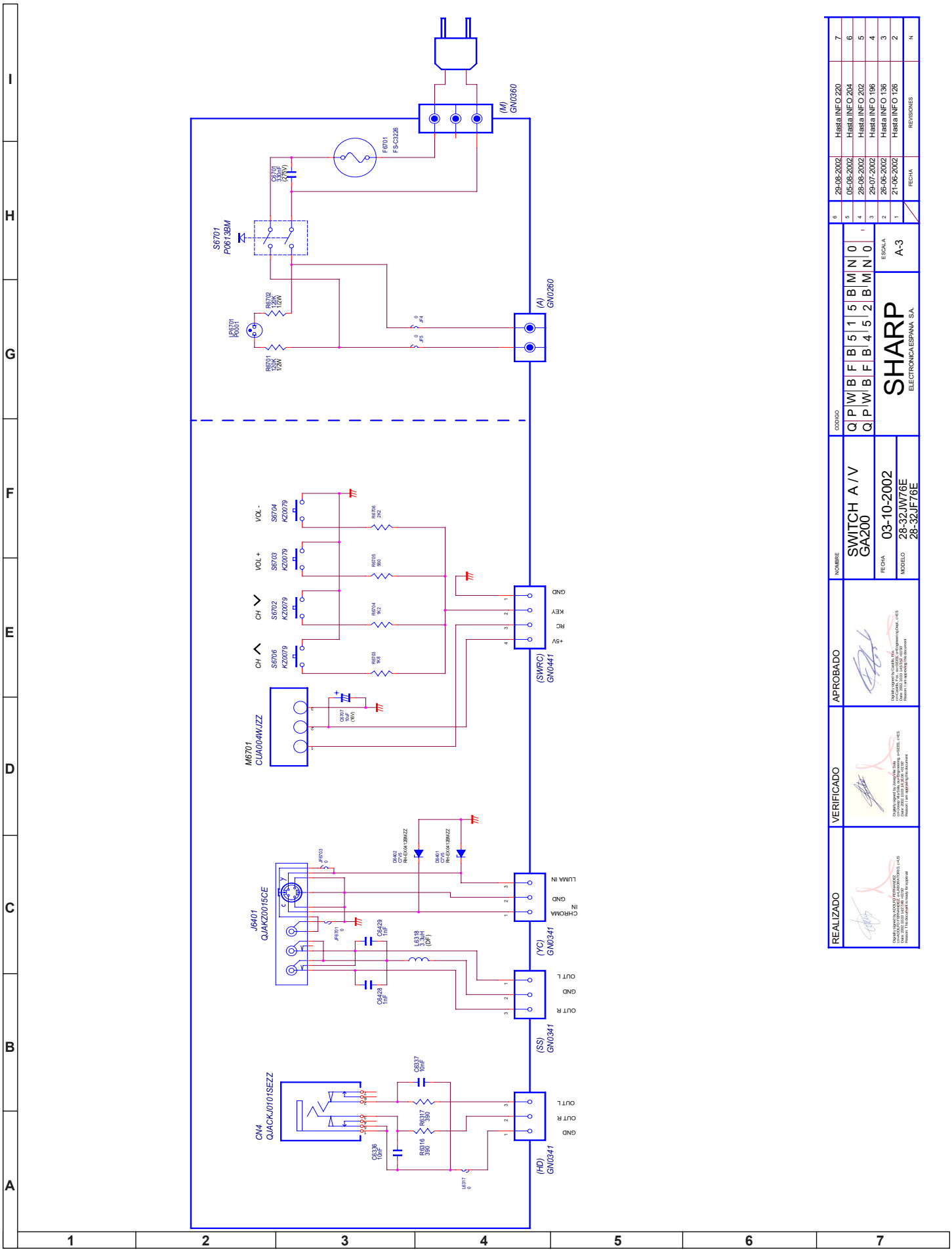
SCHEMATIC DIAGRAM OF MOTHER BOARD UNIT (F7351N1A)



Schematic Diagram of CRT Unit (F7269N3)



Schematic Diagram of Switch A/V Unit (FB515N0)



7	Hasta INFO 220	29-06-2002	6
6	Hasta INFO 204	05-08-2002	5
5	Hasta INFO 202	29-08-2002	4
4	Hasta INFO 196	29-07-2002	3
3	Hasta INFO 136	26-06-2002	2
2	Hasta INFO 126	21-06-2002	1
N	REVISIONES	FECHA	6

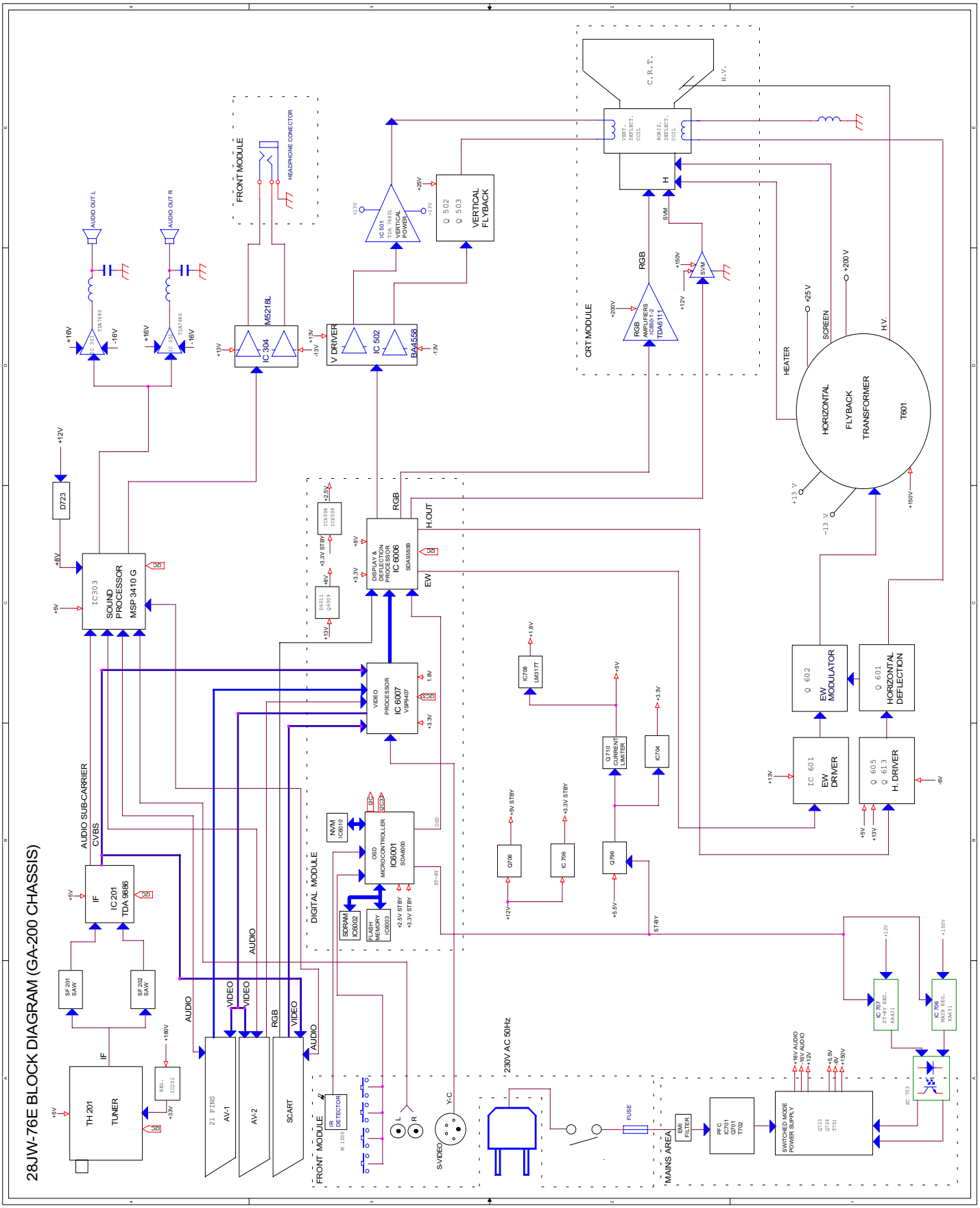
REALIZADO	VERIFICADO	APROBADO	NOMBRE: SWITCH A/V GA200
			FECHA: 03-10-2002
			MODELO: 28-32JW76E 28-32JF76E

CODIGO: Q P W B F B 5 1 5 2 B M N 0 / Q P W B F B 4 5 2 B M N 0

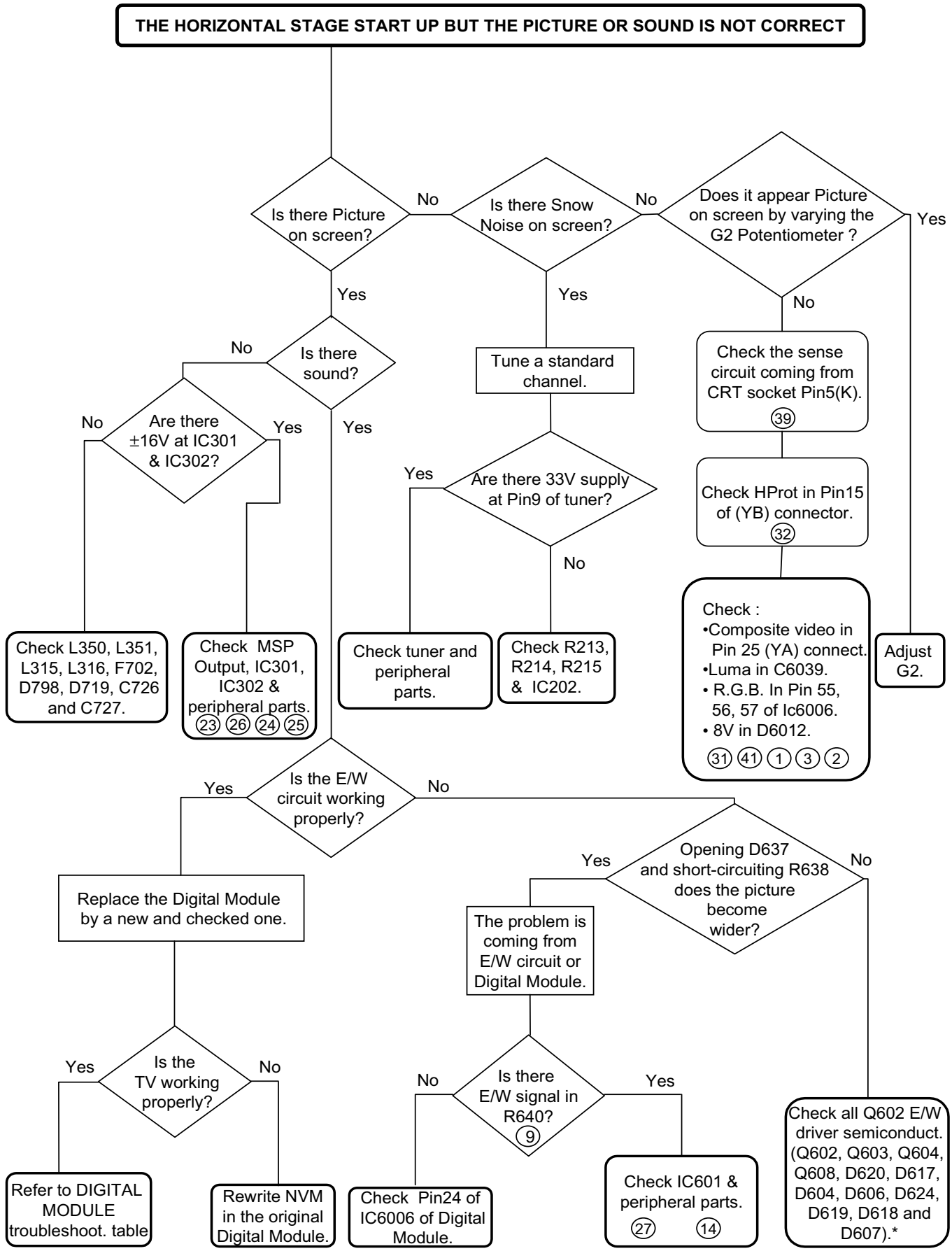
SHARP ELECTRONICA ESPAÑA S.A.

ESCALA: A-3

BLOCK DIAGRAM

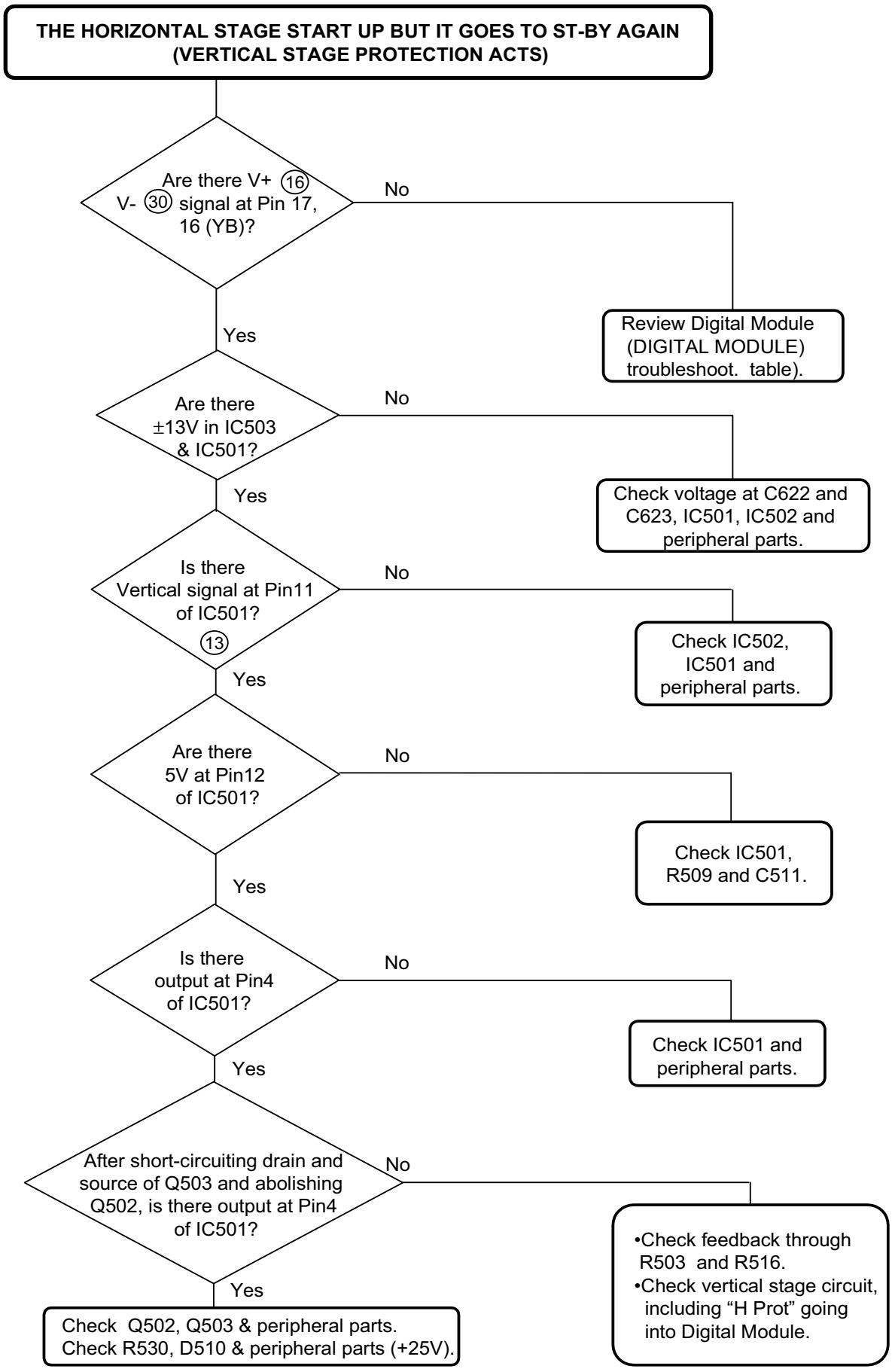


TROUBLESHOOTING TABLES


THE HORIZONTAL STAGE START UP BUT THE PICTURE OR SOUND IS NOT CORRECT
Is there Picture on screen?
No
Is there Snow Noise on screen?
No
Does it appear Picture on screen by varying the G2 Potentiometer ?
Yes
Yes
Yes
No
Is there sound?
No
Yes
Tune a standard channel.
Check the sense circuit coming from CRT socket Pin5(K). (39)
No
Are there ±16V at IC301 & IC302?
No
Yes
Yes
Are there 33V supply at Pin9 of tuner?
Yes
Check HProt in Pin15 of (YB) connector. (32)
No
Check L350, L351, L315, L316, F702, D798, D719, C726 and C727.
Check MSP Output, IC301, IC302 & peripheral parts. (23) (26) (24) (25)
Check tuner and peripheral parts.
Check R213, R214, R215 & IC202.
Check :
•Composite video in Pin 25 (YA) connect.
•Luma in C6039.
• R.G.B. In Pin 55, 56, 57 of Ic6006.
• 8V in D6012.
(31) (41) (1) (3) (2)
Adjust G2.
Yes
Is the E/W circuit working properly?
No
Yes
Opening D637 and short-circuiting R638 does the picture become wider?
No
Replace the Digital Module by a new and checked one.
The problem is coming from E/W circuit or Digital Module.
Yes
Is the TV working properly?
No
No
Is there E/W signal in R640? (9)
Yes
Refer to DIGITAL MODULE troubleshoot. table
Rewrite NVM in the original Digital Module.
Check Pin24 of IC6006 of Digital Module.
Check IC601 & peripheral parts. (27) (14)
Check all Q602 E/W driver semiconduct. (Q602, Q603, Q604, Q608, D620, D617, D604, D606, D624, D619, D618 and D607).*

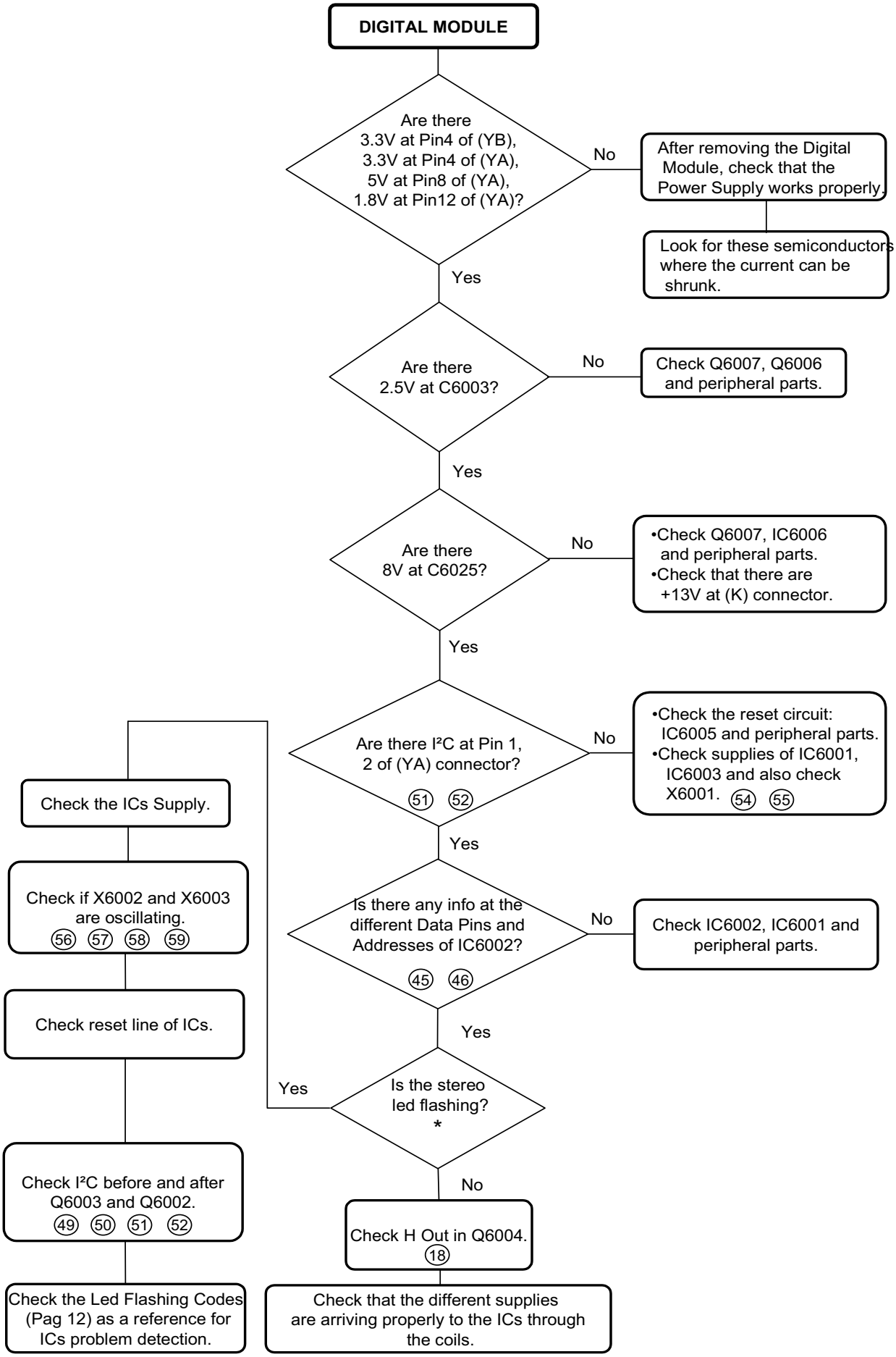
*Although the checking of these parts could be right, they may be partially damaged. So if the problem remains proceed to replace all parts.

(xx) Test Point

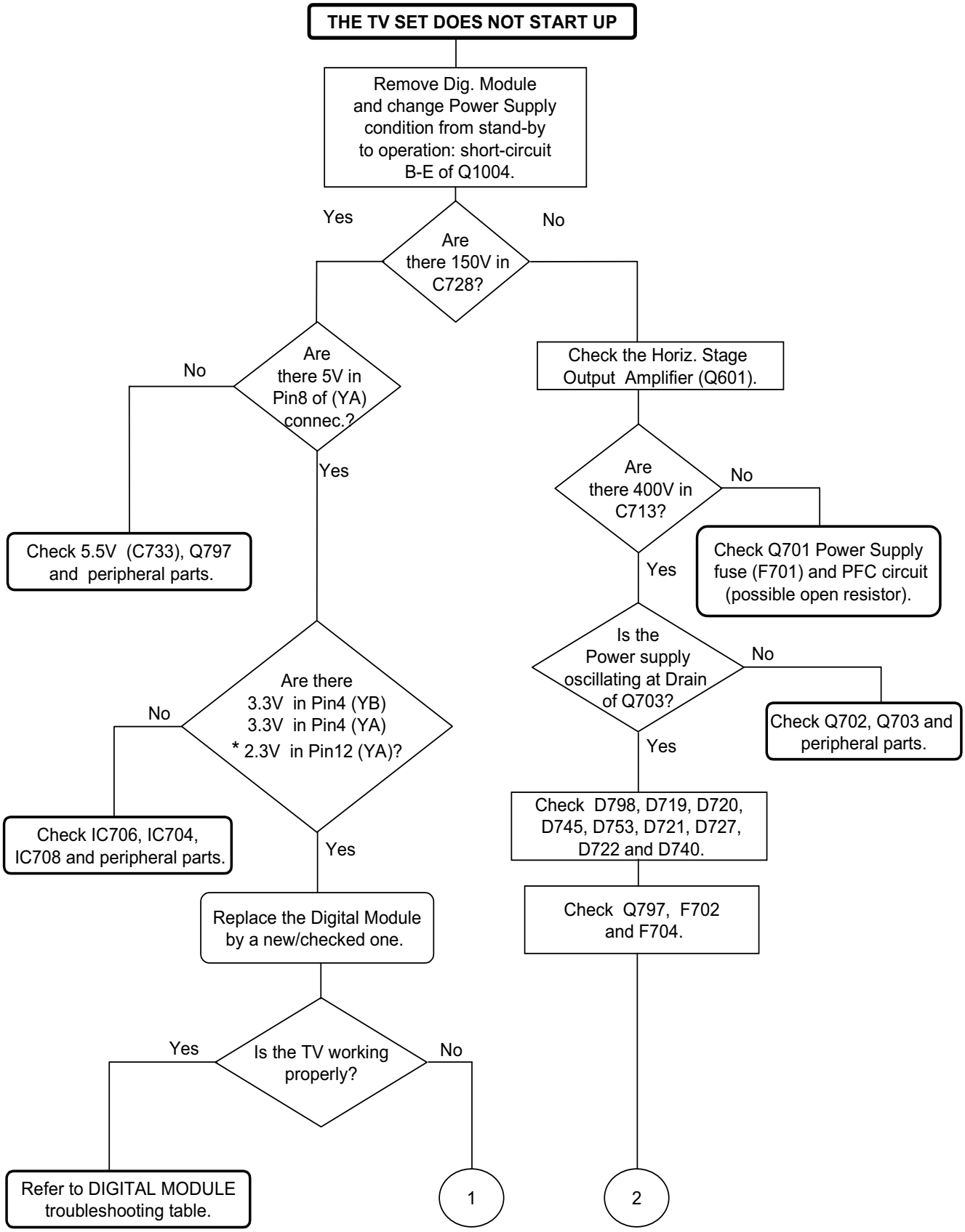

THE HORIZONTAL STAGE START UP BUT IT GOES TO ST-BY AGAIN
(VERTICAL STAGE PROTECTION ACTS)
Are there V+ (16) V- (30) signal at Pin 17, 16 (YB)?
No
Review Digital Module (DIGITAL MODULE) troubleshoot. table).
Yes
Are there ±13V in IC503 & IC501?
No
Check voltage at C622 and C623, IC501, IC502 and peripheral parts.
Yes
Is there Vertical signal at Pin11 of IC501? (13)
No
Check IC502, IC501 and peripheral parts.
Yes
Are there 5V at Pin12 of IC501?
No
Check IC501, R509 and C511.
Yes
Is there output at Pin4 of IC501?
No
Check IC501 and peripheral parts.
Yes
After short-circuiting drain and source of Q503 and abolishing Q502, is there output at Pin4 of IC501?
No
•Check feedback through R503 and R516.
•Check vertical stage circuit, including “H Prot” going into Digital Module.
Yes
Check Q502, Q503 & peripheral parts.
Check R530, D510 & peripheral parts (+25V).

Note: The different supplies of Vertical Stage are coming from the flyback transformer through Vertical Stage ICs, so only is fed when the Horizontal Stage is working.

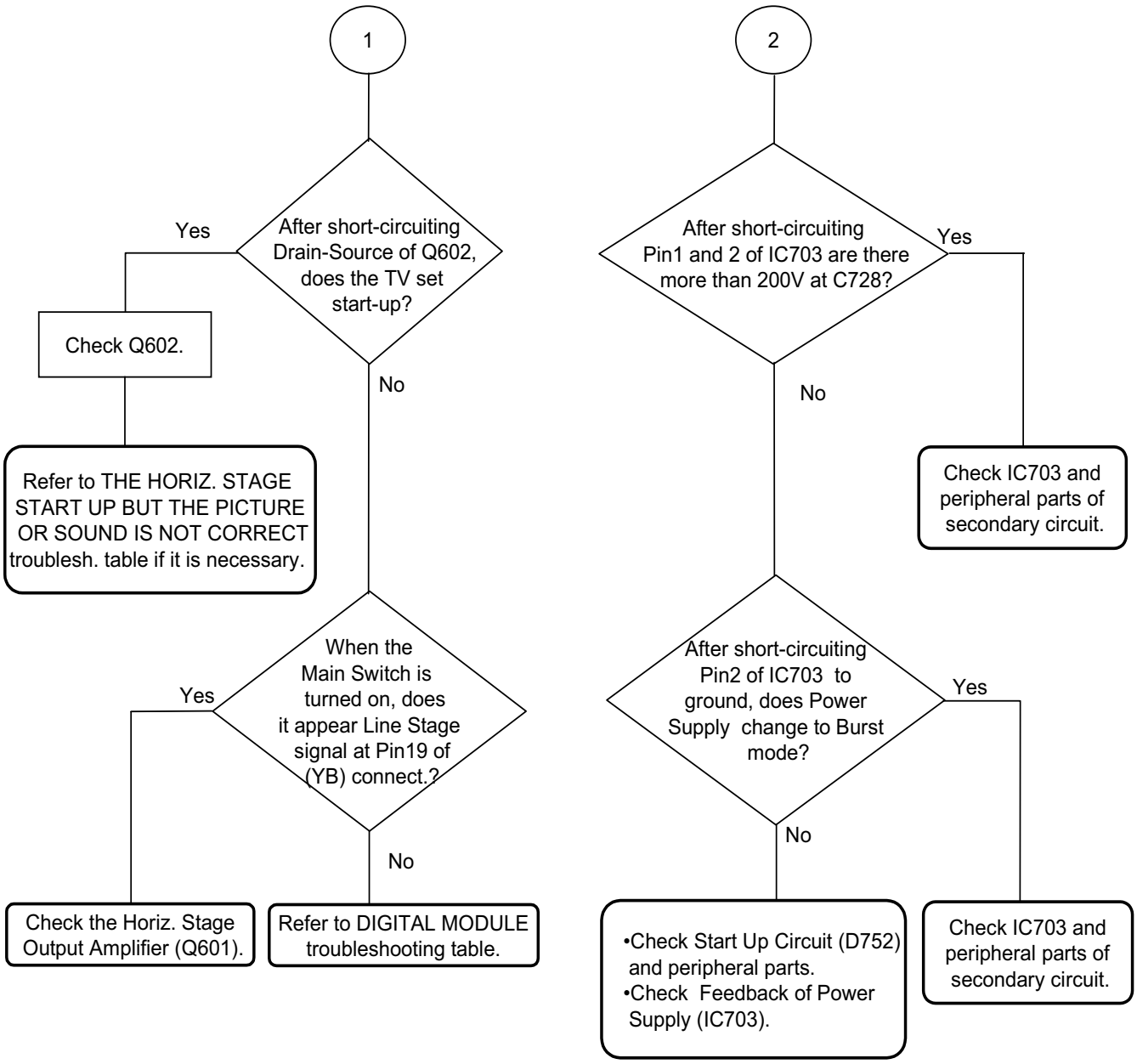
(xx) Test Point


DIGITAL MODULE
Are there 3.3V at Pin4 of (YB), 3.3V at Pin4 of (YA), 5V at Pin8 of (YA), 1.8V at Pin12 of (YA)?
No
After removing the Digital Module, check that the Power Supply works properly.
Look for these semiconductors where the current can be shrunk.
Yes
Are there 2.5V at C6003?
No
Check Q6007, Q6006 and peripheral parts.
Yes
Are there 8V at C6025?
No
•Check Q6007, IC6006 and peripheral parts.
•Check that there are +13V at (K) connector.
Yes
Are there I²C at Pin 1, 2 of (YA) connector?
51 52
No
•Check the reset circuit: IC6005 and peripheral parts.
•Check supplies of IC6001, IC6003 and also check X6001. 54 55
Yes
Is there any info at the different Data Pins and Addresses of IC6002?
45 46
No
Check IC6002, IC6001 and peripheral parts.
Yes
Is the stereo led flashing?
*
Yes
No
Check the ICs Supply.
Check if X6002 and X6003 are oscillating.
56 57 58 59
Check reset line of ICs.
Check I²C before and after Q6003 and Q6002.
49 50 51 52
Check the Led Flashing Codes (Pag 12) as a reference for ICs problem detection.
Check H Out in Q6004.
18
Check that the different supplies are arriving properly to the ICs through the coils.

* XXJF76E and XXJW76E models don't have a stereo led. Please refer to "LED FLASHING CODES" (Page 14).
(XX) Test Point


THE TV SET DOES NOT START UP
Remove Dig. Module and change Power Supply condition from stand-by to operation: short-circuit B-E of Q1004.
Are there 150V in C728?
Yes
No
Are there 5V in Pin8 of (YA) connec.?
No
Yes
Check 5.5V (C733), Q797 and peripheral parts.
Are there 3.3V in Pin4 (YB) 3.3V in Pin4 (YA) * 2.3V in Pin12 (YA)?
No
Yes
Check IC706, IC704, IC708 and peripheral parts.
Replace the Digital Module by a new/checked one.
Is the TV working properly?
Yes
No
Refer to DIGITAL MODULE troubleshooting table.
1
Check the Horiz. Stage Output Amplifier (Q601).
Are there 400V in C713?
No
Yes
Check Q701 Power Supply fuse (F701) and PFC circuit (possible open resistor).
Is the Power supply oscillating at Drain of Q703?
No
Yes
Check Q702, Q703 and peripheral parts.
Check D798, D719, D720, D745, D753, D721, D727, D722 and D740.
Check Q797, F702 and F704.
2

*In the original situation (with the Digital Module assembled) this value is 1.8V.


1
After short-circuiting Drain-Source of Q602, does the TV set start-up?
Yes
Check Q602.
Refer to THE HORIZ. STAGE START UP BUT THE PICTURE OR SOUND IS NOT CORRECT troublesh. table if it is necessary.
No
When the Main Switch is turned on, does it appear Line Stage signal at Pin19 of (YB) connect.?
Yes
Check the Horiz. Stage Output Amplifier (Q601).
No
Refer to DIGITAL MODULE troubleshooting table.
2
After short-circuiting Pin1 and 2 of IC703 are there more than 200V at C728?
Yes
Check IC703 and peripheral parts of secondary circuit.
No
After short-circuiting Pin2 of IC703 to ground, does Power Supply change to Burst mode?
Yes
Check IC703 and peripheral parts of secondary circuit.
No
•Check Start Up Circuit (D752) and peripheral parts.
•Check Feedback of Power Supply (IC703).

Note: Once the TV set has been repaired, have in mind to put the TV set in the default situation (undo short-circuits, specially the applied in Q1004).

ICs ADDITIONAL INFORMATION

TDA9886TS (IC201)

Features

- 5 V supply voltage
- Gain controlled wide-band Vision Intermediate Frequency (VIF) amplifier, AC-coupled
- Multistandard true synchronous demodulation with active carrier regeneration: very linear demodulation, good intermodulation figures, reduced harmonics, and excellent pulse response
- Gated phase detector for L and L-accent standard
- Fully integrated VIF Voltage Controlled Oscillator (VCO), alignment-free, frequencies switchable for all negative and positive modulated standards via I²C-bus
- Digital acquisition help, VIF frequencies of 33.4, 33.9, 38.0, 38.9, 45.75, and 58.75 MHz
- 4 MHz reference frequency input: signal from Phase-Locked Loop (PLL) tuning system or operating as crystal oscillator
- VIF Automatic Gain Control (AGC) detector for gain control, operating as peak sync detector for negative modulated signals and as a peak white detector for positive modulated signals
- External AGC setting via pin OP1
- Precise fully digital Automatic Frequency Control (AFC) detector with 4-bit digital-to-analog converter, AFC bits readable via I²C-bus
- TakeOver Point (TOP) adjustable via I²C-bus or alternatively with potentiometer
- Fully integrated sound carrier trap for 4.5, 5.5, 6.0, and 6.5 MHz, controlled by FM-PLL oscillator
- Sound IF (SIF) input for single reference Quasi Split Sound (QSS) mode, PLL controlled
- SIF-AGC for gain controlled SIF amplifier, single reference QSS mixer able to operate in high performance single reference QSS mode and in intercarrier mode, switchable via I²C-bus
- AM demodulator without extra reference circuit
- Alignment-free selective FM-PLL demodulator with high linearity and low noise
- I²C-bus control for all functions
- I²C-bus transceiver with pin programmable Module Address (MAD)
- Four I²C-bus addresses via MAD.

2 GENERAL DESCRIPTION

The TDA9885 is an alignment-free multistandard (PAL and NTSC) vision and sound IF signal PLL demodulator for negative modulation only and FM processing.

The TDA9886 is an alignment-free multistandard (PAL, SECAM and NTSC) vision and sound IF signal PLL demodulator for positive and negative modulation, including sound AM and FM processing.

3 APPLICATIONS

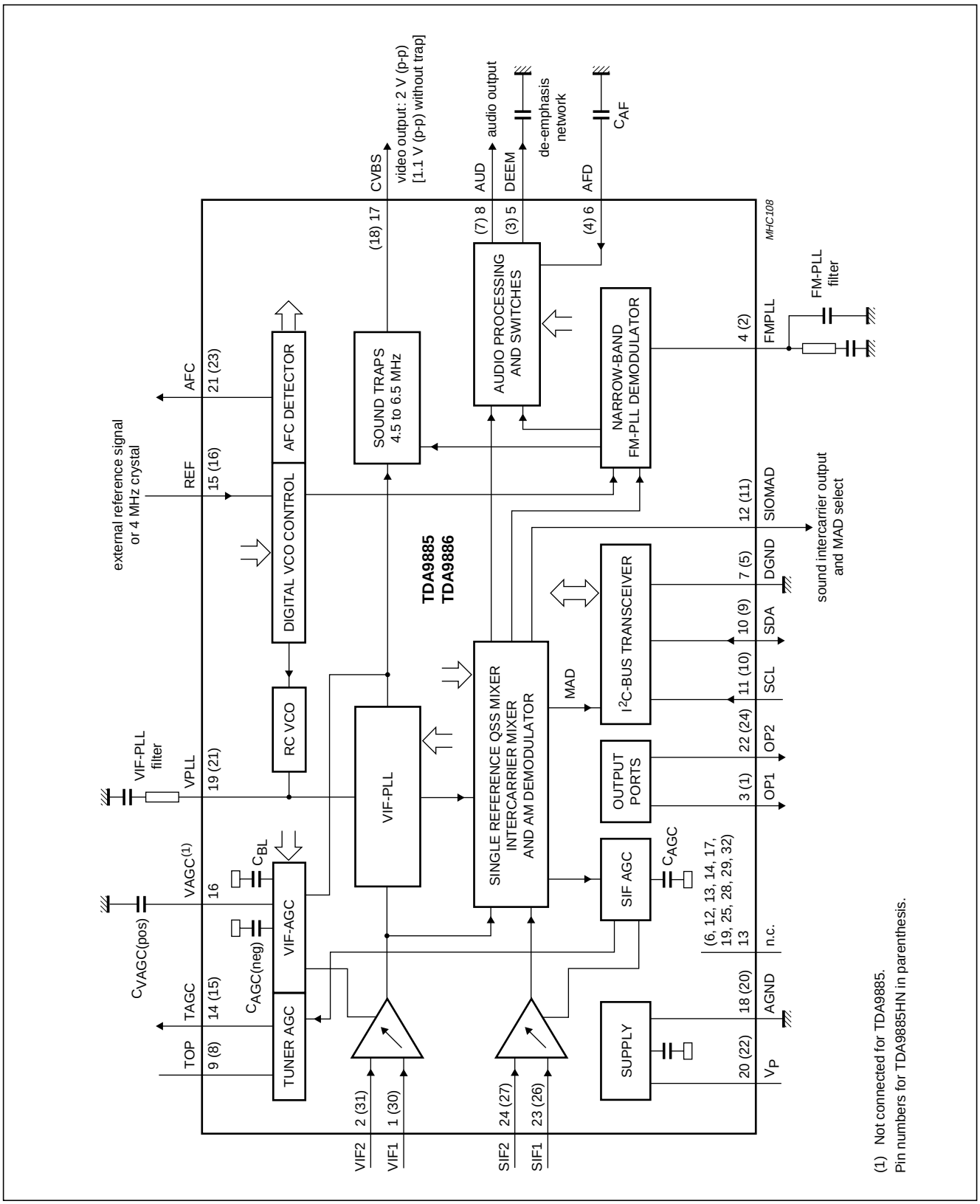
- TV, VTR, PC and STB applications.

4 ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
TDA9885T/V3	SO24	plastic small outline package; 24 leads; body width 7.5 mm	SOT137-1
TDA9885TS/V3	SSOP24	plastic shrink small outline package; 24 leads; body width 5.3 mm	SOT340-1
TDA9885HN/V3	HVQFN32	plastic, heatsink very thin quad flat package; no leads; 32 terminals; body 5 × 5 × 0.85 mm	SOT617-1
TDA9886T/V3	SO24	plastic small outline package; 24 leads; body width 7.5 mm	SOT137-1
TDA9886TS/V3	SSOP24	plastic shrink small outline package; 24 leads; body width 5.3 mm	SOT340-1

TDA9886TS (IC201)

Block Diagram

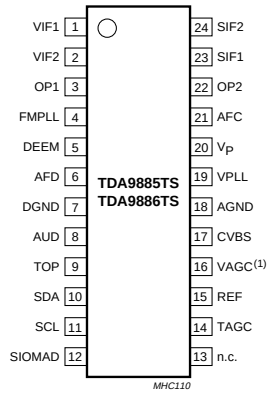


(1) Not connected for TDA9885.
Pin numbers for TDA9885HN in parenthesis.

TDA9886TS (IC201)

Pinning

SYMBOL	PIN			DESCRIPTION
	TDA9886T TDA9886TS	TDA9885T TDA9885TS	TDA9885HN	
VIF1	1	1	30	VIF differential input 1
VIF2	2	2	31	VIF differential input 2
n.c.	–	–	32	not connected
OP1	3	3	1	output port 1; open-collector
FMPLL	4	4	2	FM-PLL for loop filter
DEEM	5	5	3	de-emphasis output for capacitor
AFD	6	6	4	AF decoupling input for capacitor
DGND	7	7	5	digital ground
n.c.	–	–	6	not connected
AUD	8	8	7	audio output
TOP	9	9	8	tuner AGC TakeOver Point (TOP) for resistor adjustment
SDA	10	10	9	I^2C-bus data input and output
SCL	11	11	10	I^2C-bus clock input
SIOMAD	12	12	11	sound intercarrier output and MAD select with resistor
n.c.	–	–	12	not connected
n.c.	13	13	13	not connected
n.c.	–	–	14	not connected
TAGC	14	14	15	tuner AGC output
REF	15	15	16	4 MHz crystal or reference signal input
VAGC	16	–	–	VIF-AGC for capacitor
n.c.	–	16	17	not connected
CVBS	17	17	18	composite video output
n.c.	–	–	19	not connected
AGND	18	18	20	analog ground
VPLL	19	19	21	VIF-PLL for loop filter
V_P	20	20	22	supply voltage
AFC	21	21	23	AFC output
OP2	22	22	24	output port 2; open-collector
n.c.	–	–	25	not connected
SIF1	23	23	26	SIF differential input 1 and MAD select with resistor
SIF2	24	24	27	SIF differential input 2 and MAD select with resistor
n.c.	–	–	28	not connected
n.c.	–	–	29	not connected

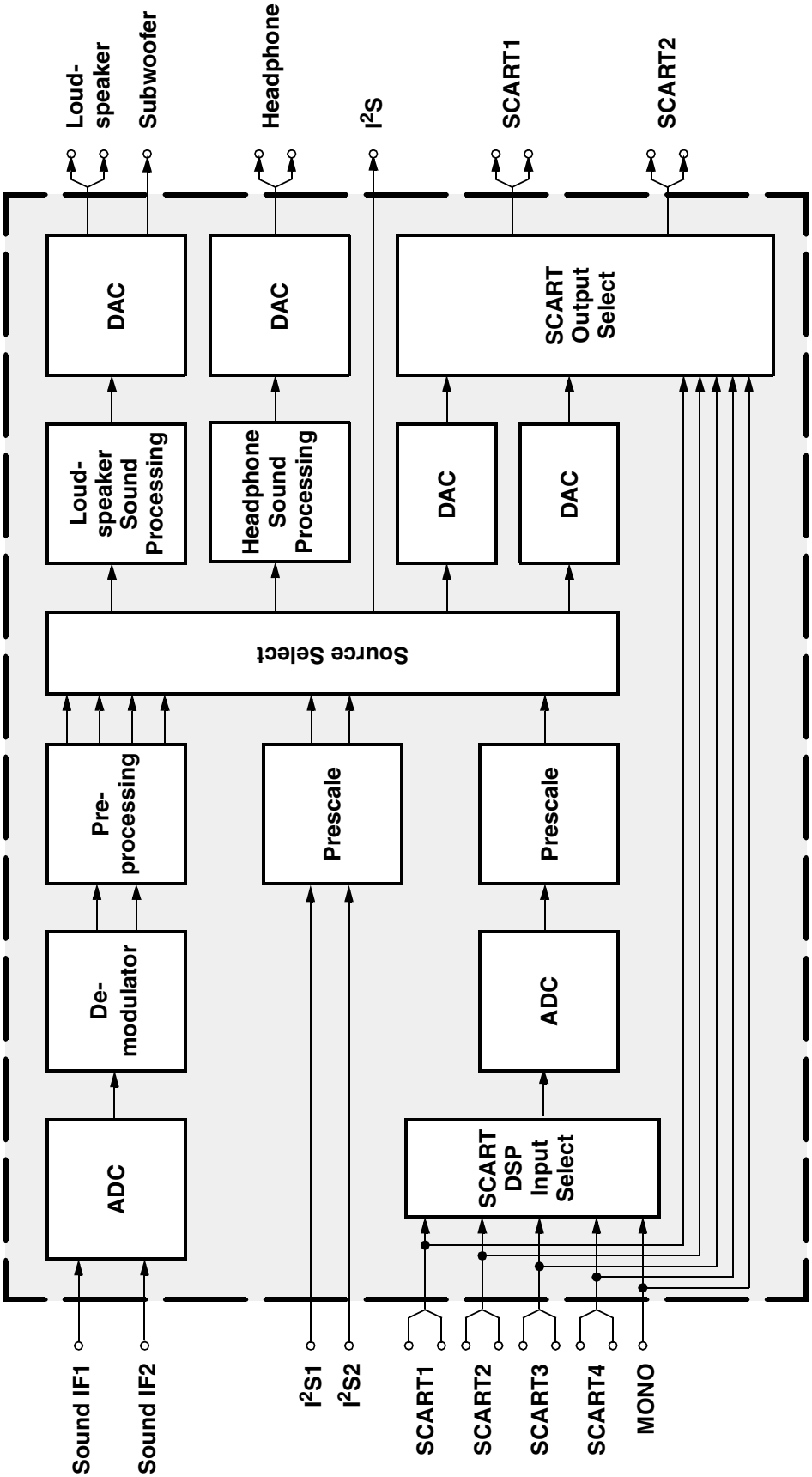


(1) Not connected for TDA9885TS.

Pin configuration for SSOP24.

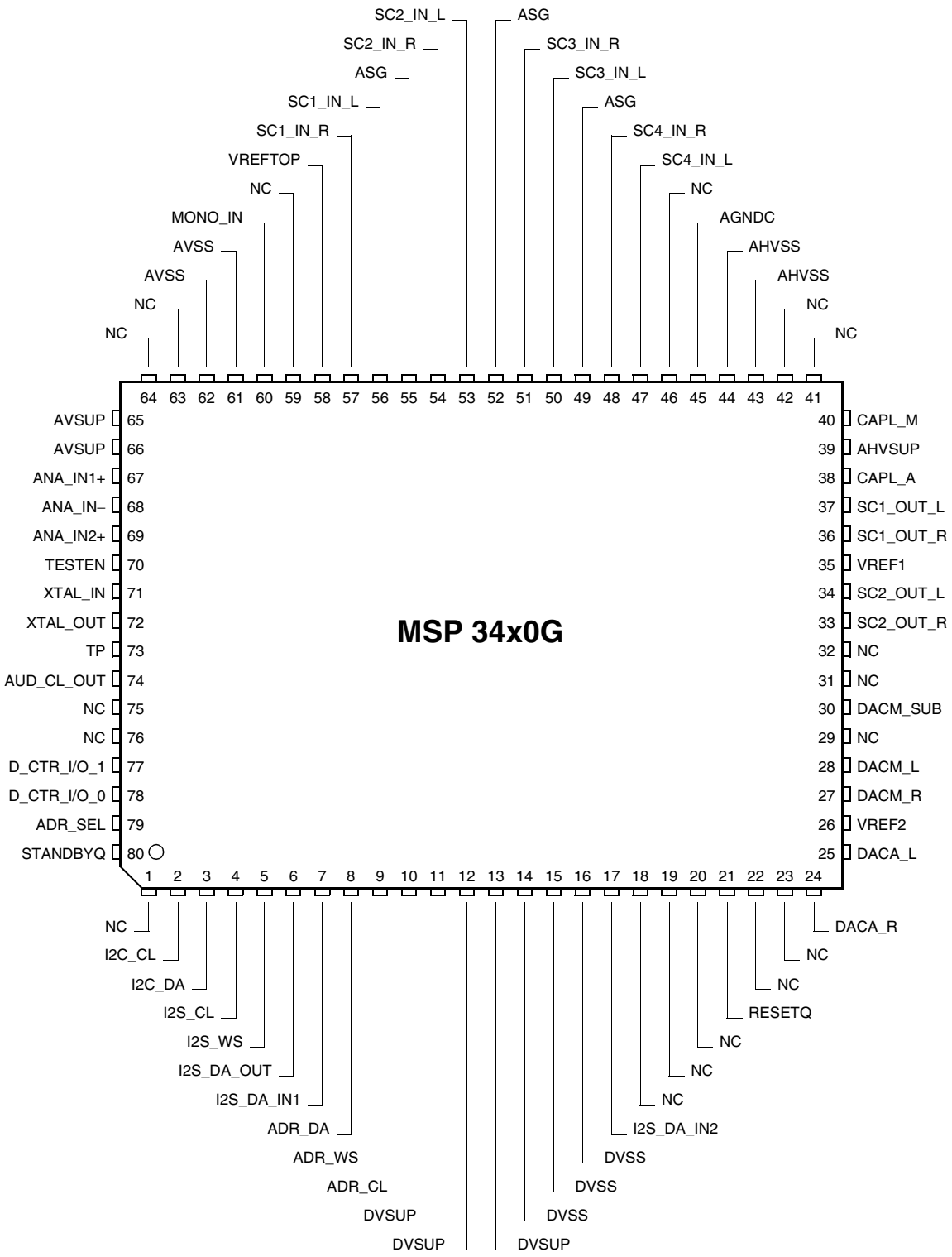
MSP3410G (IC303)

Block Diagram



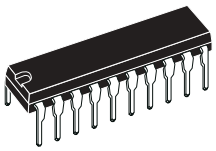
MSP3410G (IC303)

Pinning



TDA7480L (IC501)

- 10W OUTPUT POWER: R_L = 8Ω/4Ω; THD = 10%
- HIGH EFFICIENCY
- NO HEATSINK
- SPLIT SUPPLY
- OVERVOLTAGE PROTECTION
- ST-BY AND MUTE FEATURES
- SHORT CIRCUIT PROTECTION
- THERMAL OVERLOAD PROTECTION



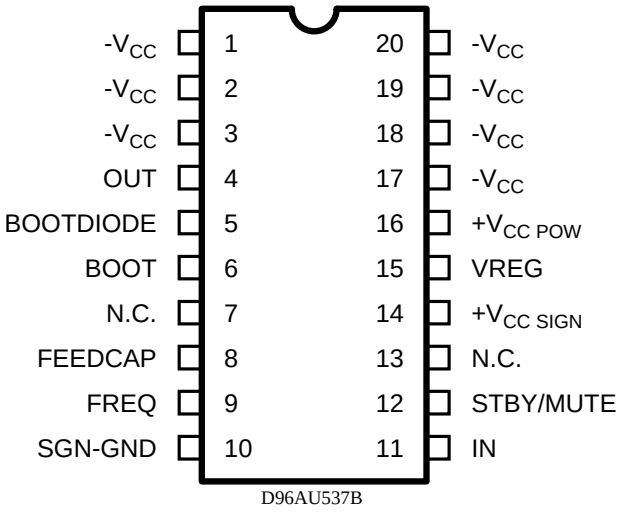
PDIP20 (14+3+3)

ORDERING NUMBER: TDA7480L

DESCRIPTION

The TDA7480L is an audio class-D amplifier assembled in Power DIP package specially designed for high efficiency applications mainly for TV and Home Stereo sets.

Pinning



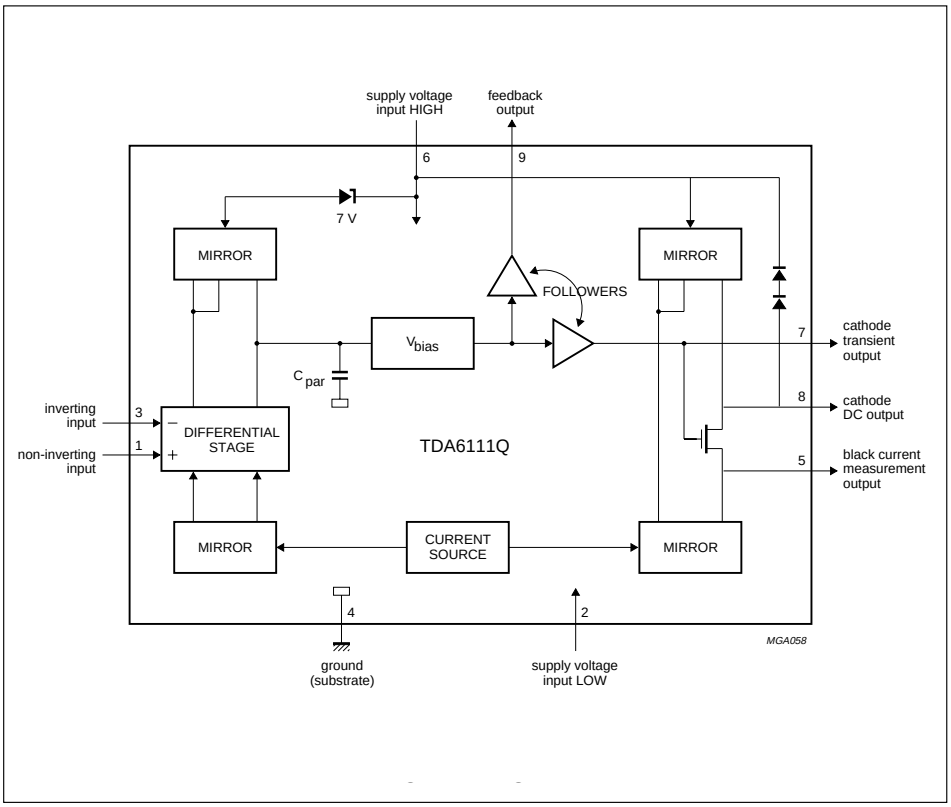
D96AU537B

Pin Functions

N.	Name	Function
1	$-V_{CC}$	NEGATIVE SUPPLY.
2	$-V_{CC}$	NEGATIVE SUPPLY.
3	$-V_{CC}$	NEGATIVE SUPPLY.
4	OUT	PWM OUTPUT
5	BOOTDIODE	BOOTSTRAP DIODE ANODE
6	BOOT	BOOTSTRAP CAPACITOR
7	NC	NOT CONNECTED
8	FEEDCAP	FEEDBACK INTEGRATING CAPACITANCE
9	FREQUENCY	SETTING FREQUENCY RESISTOR
10	SGN-GND	SIGNAL GROUND
11	IN	INPUT
12	ST-BY-MUTE	ST-BY/ MUTE CONTROL PIN
13	NC	NOT CONNECTED
14	$+V_{CC}$ SIGN	POSITIVE SIGNAL SUPPLY
15	VREG	10V INTERNAL REGULATOR
16	$+V_{CC}$ POW	POSITIVE POWER SUPPLY
17	$-V_{CC}$	NEGATIVE SUPPLY (TO BE CONNECTED TO PIN 16 VIA C5)
18	$-V_{CC}$	NEGATIVE SUPPLY
19	$-V_{CC}$	NEGATIVE SUPPLY
20	$-V_{CC}$	NEGATIVE SUPPLY

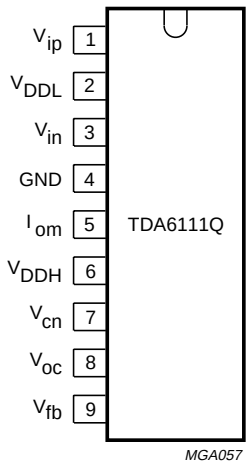
TDA6111 (IC850, IC851, IC852)

Block Diagram



Pinning

SYMBOL	PIN	DESCRIPTION
V_{ip}	1	non-inverting voltage input
V_{DDL}	2	supply voltage LOW
V_{in}	3	inverting voltage input
GND	4	ground, substrate
I_{om}	5	black current measurement output
V_{DDH}	6	supply voltage HIGH
V_{cn}	7	cathode transient voltage output
V_{oc}	8	cathode DC voltage output
V_{fb}	9	feedback voltage output

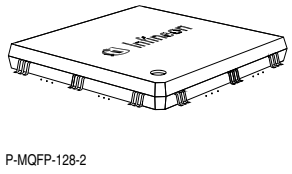


SDA 6000 (IC6001)

Teletext Decoder with Embedded 16-bit Controller M2

Version 3.00 **CMOS**

1.1 Features



P-MQFP-128-2

General

- Level 1.5, 2.5, 3.5 WST Display Compatible
- Fast External Bus Interface for SDRAM (Up to 8 MByte) and ROM or Flash-ROM (Up to 2 x 4 MByte)
- Embedded General Purpose 16 Bit CPU (Also used as TV-System Controller, C16x Compatible)
- Display Generation Based on Pixel Memory
- Program Code also Executable From External SDRAM
- Embedded Refresh Controller for External SDRAM
- Enhanced Programmable Low Power Modes
- Single 6 MHz Crystal Oscillator
- Multinorm H/V-Display Synchronization in Master or Slave Mode
- Free Programmable Pixel Clock from 10 MHz to 50 MHz
- Pixel Clock Independent from CPU Clock
- 3 × 6 Bits RGB-DACs On-Chip
- Supply Voltage 2.5 and 3.3 V
- P-MQFP-128 Package

Microcontroller Features

- 16-bit C166-CPU Kernel (C16x Compatible)
- 60 ns Instruction Cycle Time
- 2 KBytes Dual Ported IRAM
- 2 KBytes XRAM On-chip
- General Purpose Timer Units (GPT1 and GPT2).
- Asynchronous/Synchronous Serial Interface (ASC0) with IrDA Support. Full-duplex Asynchronous Up To 2 MBaud or Half-duplex Synchronous up to 4.1 MBaud.

Type	Package
SDA 6000 / SDA 6001	P-MQFP-128-2

SDA 6000 (IC6001)

- High-speed Synchronous Serial Interface (SSC). Full- and Half-duplex synchronous up to 16.5 Mbaud
- 3 Independent, HW-supported Multi Master/Slave I^2C Channels at 400 Kbit/s
- 16-Bit Watchdog Timer (WDT)
- Real Time Clock (RTC)
- On Chip Debug Support (OCDS)
- 4-Channel 8-bit A/D Converter
- 42 Multiple Purpose Ports
- 8 External Interrupts
- 33 Interrupt Nodes

Display Features

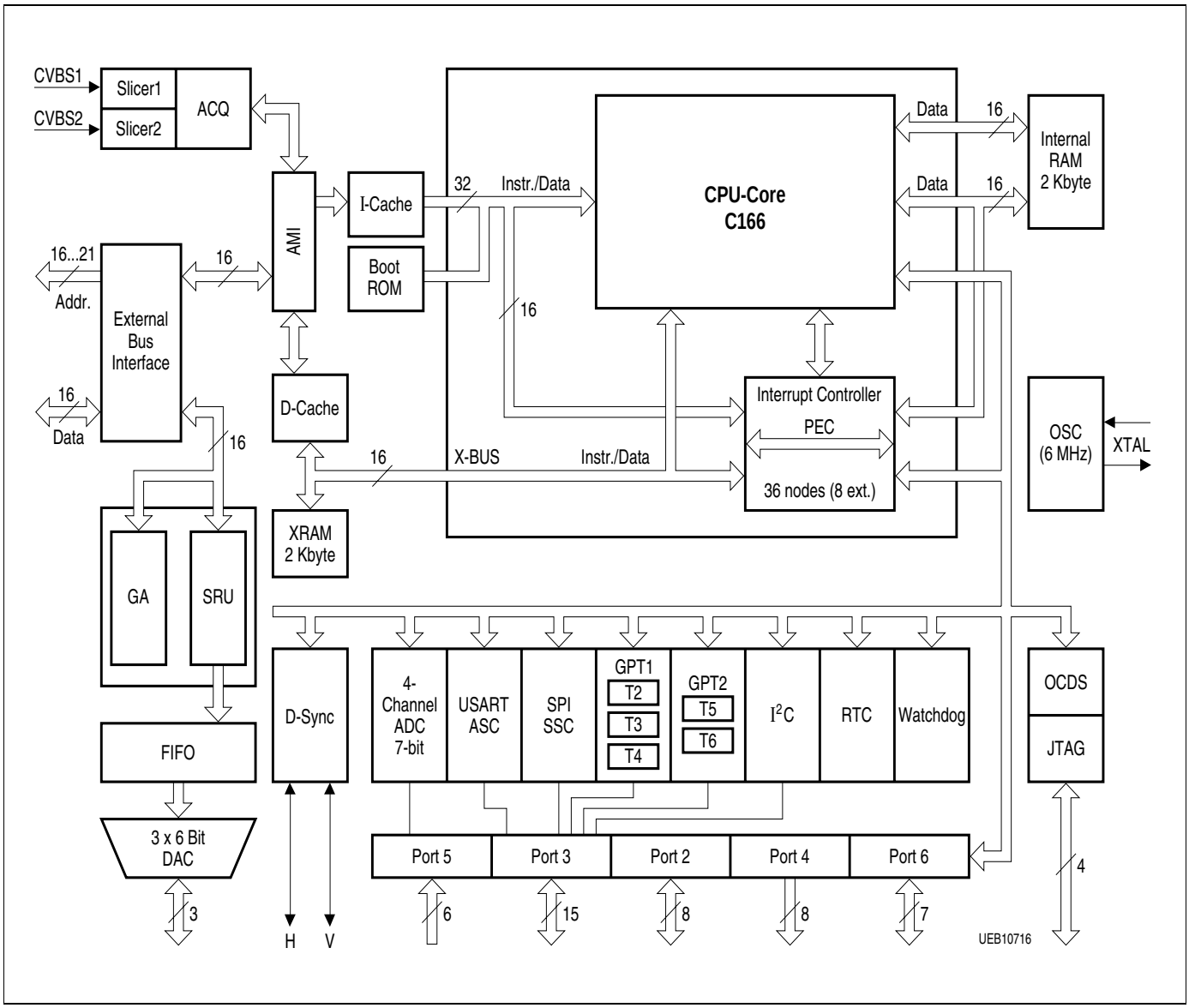
- OSD size from 0 to 2046 (0 to 1023) pixels in horizontal (vertical) direction
- Frame Buffer Based Display
- 2 HW Display Layers
- Support of Double Page Level 2.5 TTX in 100 Hz Systems
- Support of Transparency for both Layers Pixel by Pixel
- User Programmable Pixel Frequency from 10.0 MHz to 50 MHz
- Up to 65536 Displayable Colors in one Frame
- DMA Functionality
- Graphic Accelerator Functions (Draw Lines, Draw and Fill Rectangle, etc.)
- 1, 2, 4 or 8-bit Bitmaps (up to 256 out of 4096 colors)
- 12 bit/16 bit RGB Mode for Display of up to 65535 Colors
- HW-support for Proportional Characters
- HW-support for Italic Characters
- User Definable Character Fonts
- Fast Blanking and Contrast Reduction Output
- Double resolution graphic for interlaced sync rasters (SDA6001 only)

Acquisition Features

- Two Independent Data Slicers (One Multistandard Slicer + one WSS-only Slicer)
- Parallel Multi-norm Slicing (TTX, VPS, WSS, CC, G+)
- Four Different Framing Codes Available
- Data Caption only Limited by available Memory
- Programmable VBI-buffer
- Full Channel Data Slicing Supported
- Fully Digital Signal Processing
- Noise Measurement and Controlled Noise Compensation
- Attenuation Measurement and Compensation
- Group Delay Measurement and Compensation
- Exact Decoding of Echo Disturbed Signals

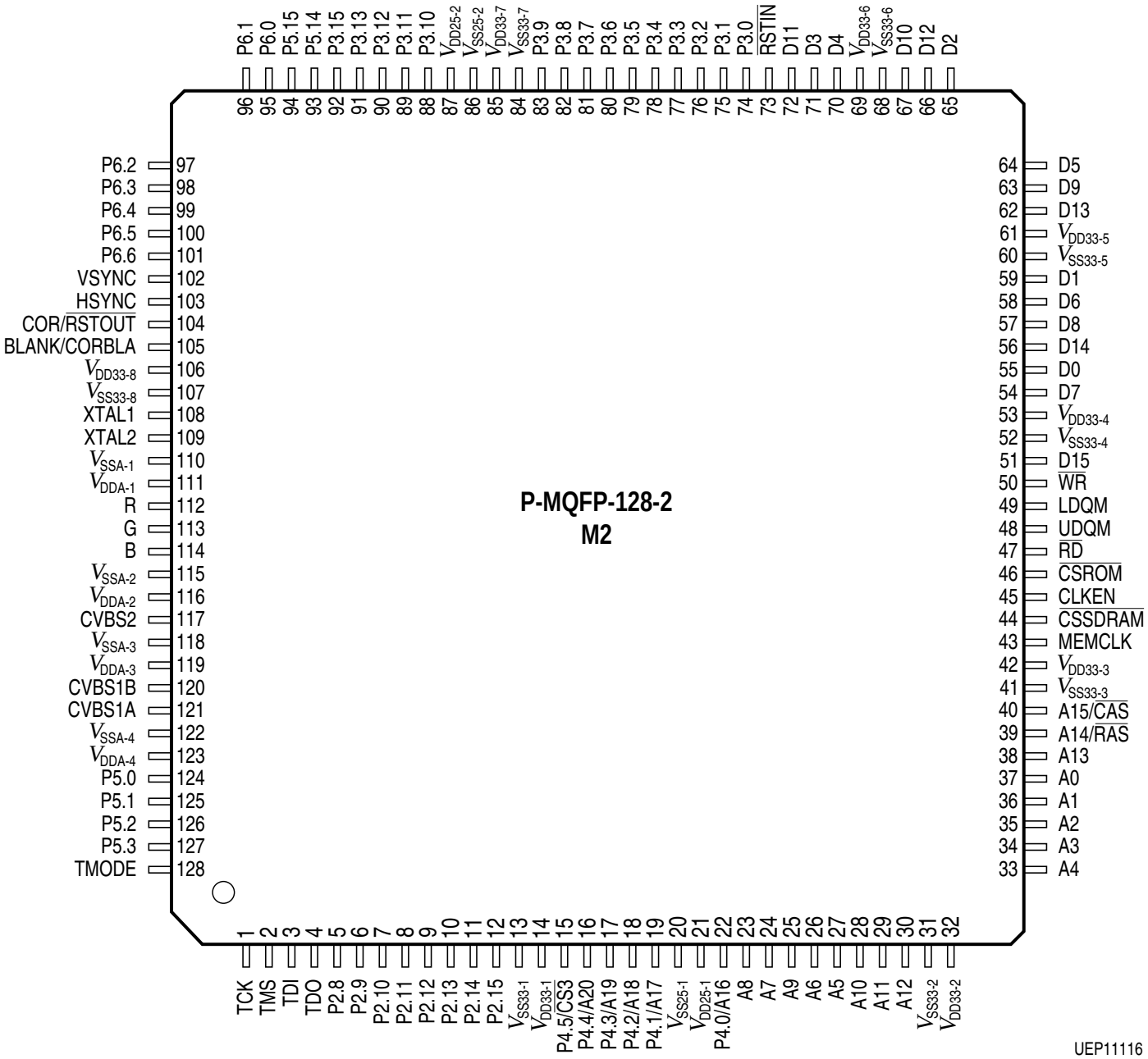
SDA 6000 (IC6001)

Block Diagram



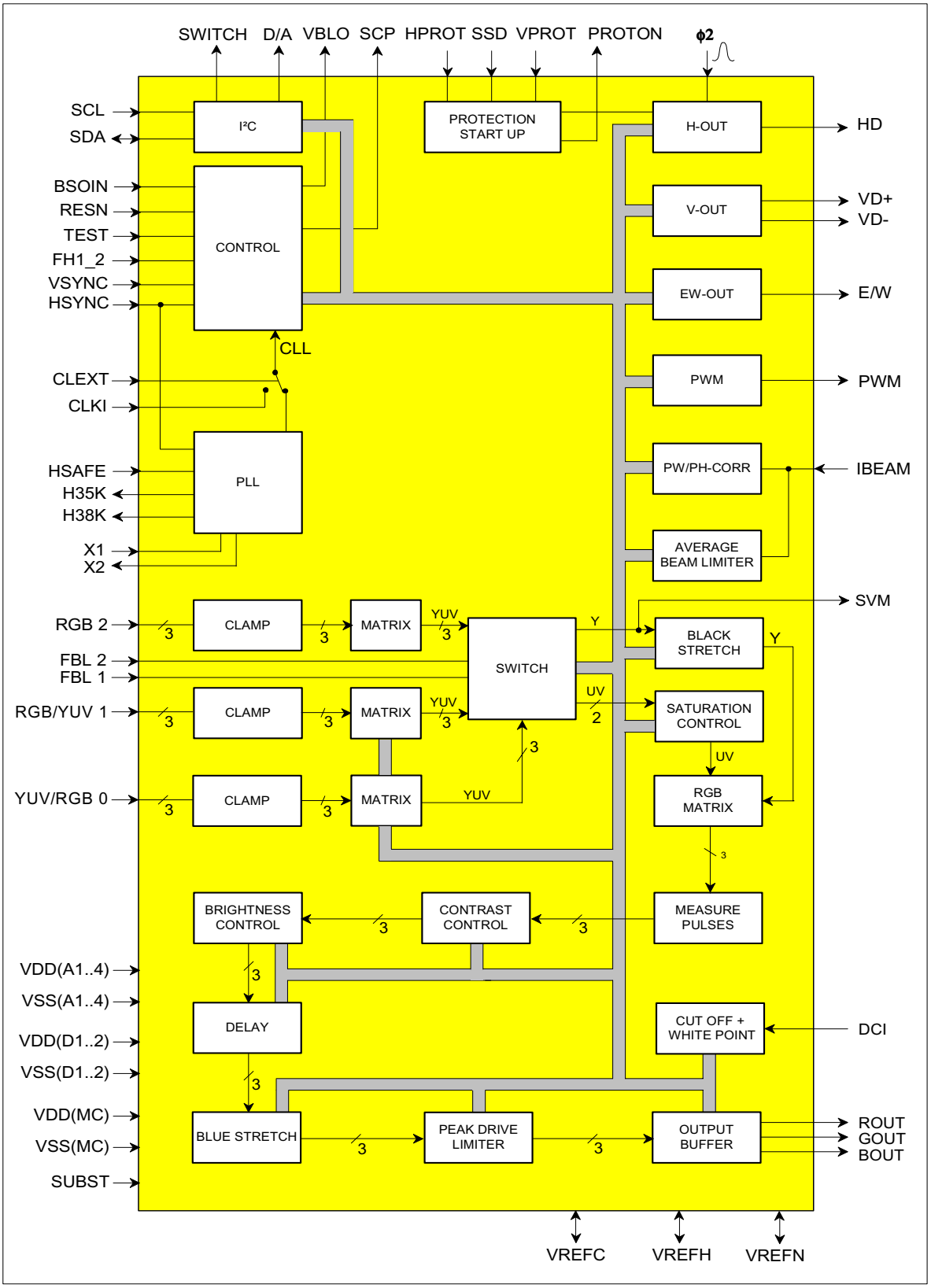
SDA 6000 (IC6001)

Pinning



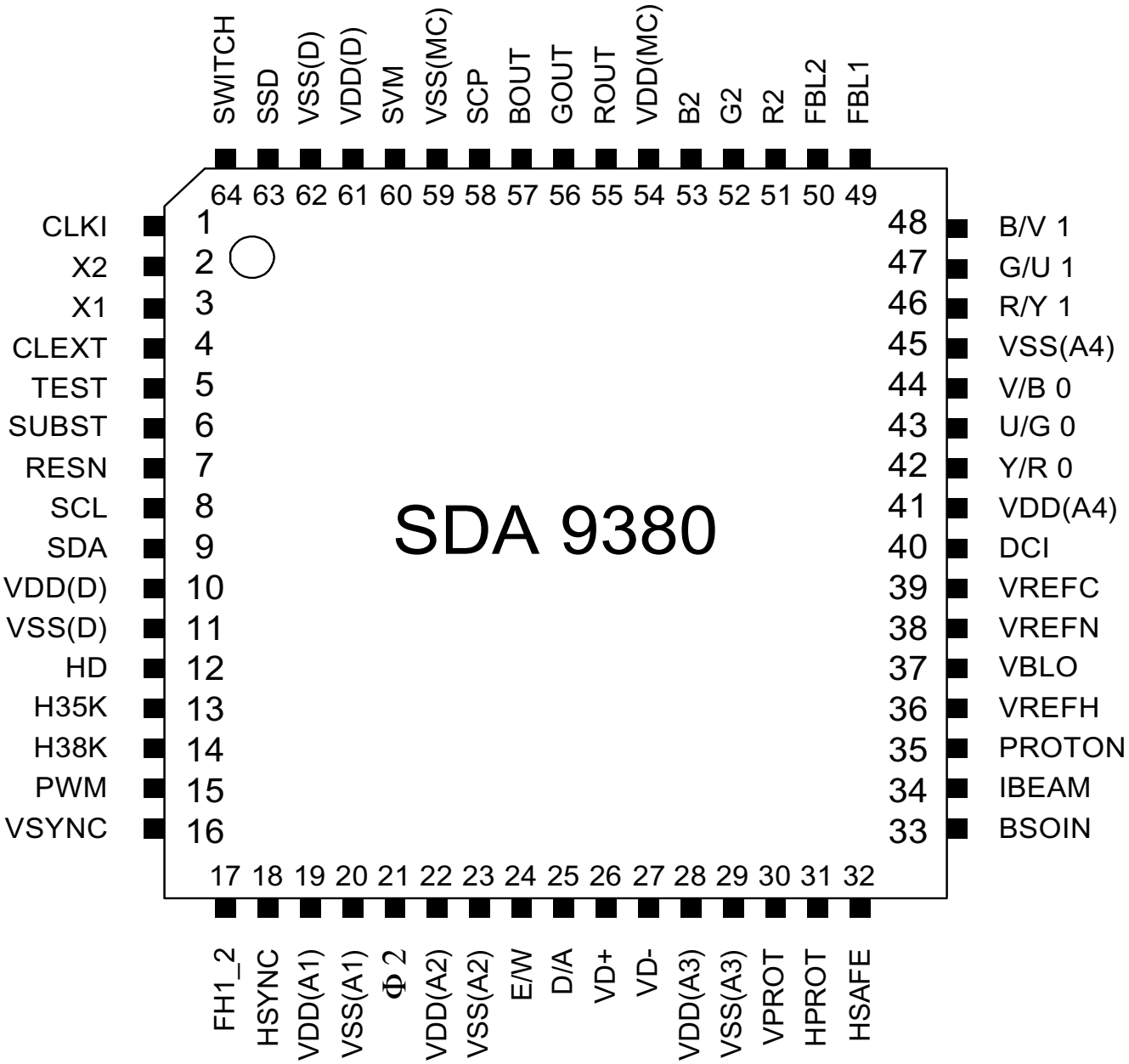
SDA9380 (IC6006)

Block Diagram



SDA9380 (IC6006)

Pin Configuration



SDA9380 (IC6006)

Pin Description

Pin No.	Name	Type	Description
1	CLKI	I/TTL	Input for external line locked clock *)
2	X2	Q	Reference oscillator output, Crystal
3	X1	I	Reference oscillator input, Crystal
4	CLEXT	I/TTL	Switching between internal (L) and external clock (H) *)
5	TEST	I/TTL	Switching between normal operation (TEST=L) and test mode (TEST=H: pins 4, 12, 13, 14, 15, 17, 49, 50, 63, 64 are additional test pins)
6	SUBST	S	Substrate pin, has to be connected to ground whenever a power supply or signal is applied
7	RESN	I/TTL	Reset input, active Low
8	SCL	I	I²C Bus clock
9	SDA	IQ	I²C Bus data
10	VDD(D)	S	Digital supply
11	VSS(D)	S	Digital ground
12	HD	Q	Control signal output for H driver stage (open drain)
13	H35K	Q/TTL	Goes High when frequency of HSYNC is about 35kHz or more
14	H38K	Q/TTL	Goes High when frequency of HSYNC is about 38kHz
15	PWM	Q/TTL	Pulse width modulated control signal output
16	VSYNC	I/TTL	V-sync input
17	FH1_2	I/TTL	Switching between $1f_H$ mode (L) and $2f_H$ mode (H)
18	HSYNC	I	HSYNC input (CLEXT=H: TTL; CLEXT=L: analog) *)
19	VDD(A1)	S	Analog supply
20	VSS(A1)	S	Analog ground
21	Φ2	I	Line flyback for H-delay compensation
22	VDD(A2)	S	Analog supply
23	VSS(A2)	S	Analog ground
24	E/W	Q	Control signal output for East-West raster correction
25	D/A	Q	Output of an I²C Bus controlled DC voltage
26	VD+	Q	Control signal output for DC coupled V-output stage
27	VD-	Q	Like VD+
28	VDD(A3)	S	Analog supply
29	VSS(A3)	S	Analog ground
30	VPROT	I	Watching external V-output stage (input is the V-saw-tooth from feedback resistor)
31	HPROT	I	Watching EHT (input is e.g. H-flyback)
32	HSAFE	I	Watching B+ when frequency of HD has to be decreased
33	BSOIN	I	Input for starting Black Switch-Off
34	IBEAM	I	Input for a beam current dependent signal for stabilization of width, height and H-phase
35	PROTON	Q/TTL	Protection on (goes High after response of H- or V-protection)

SDA9380 (IC6006)

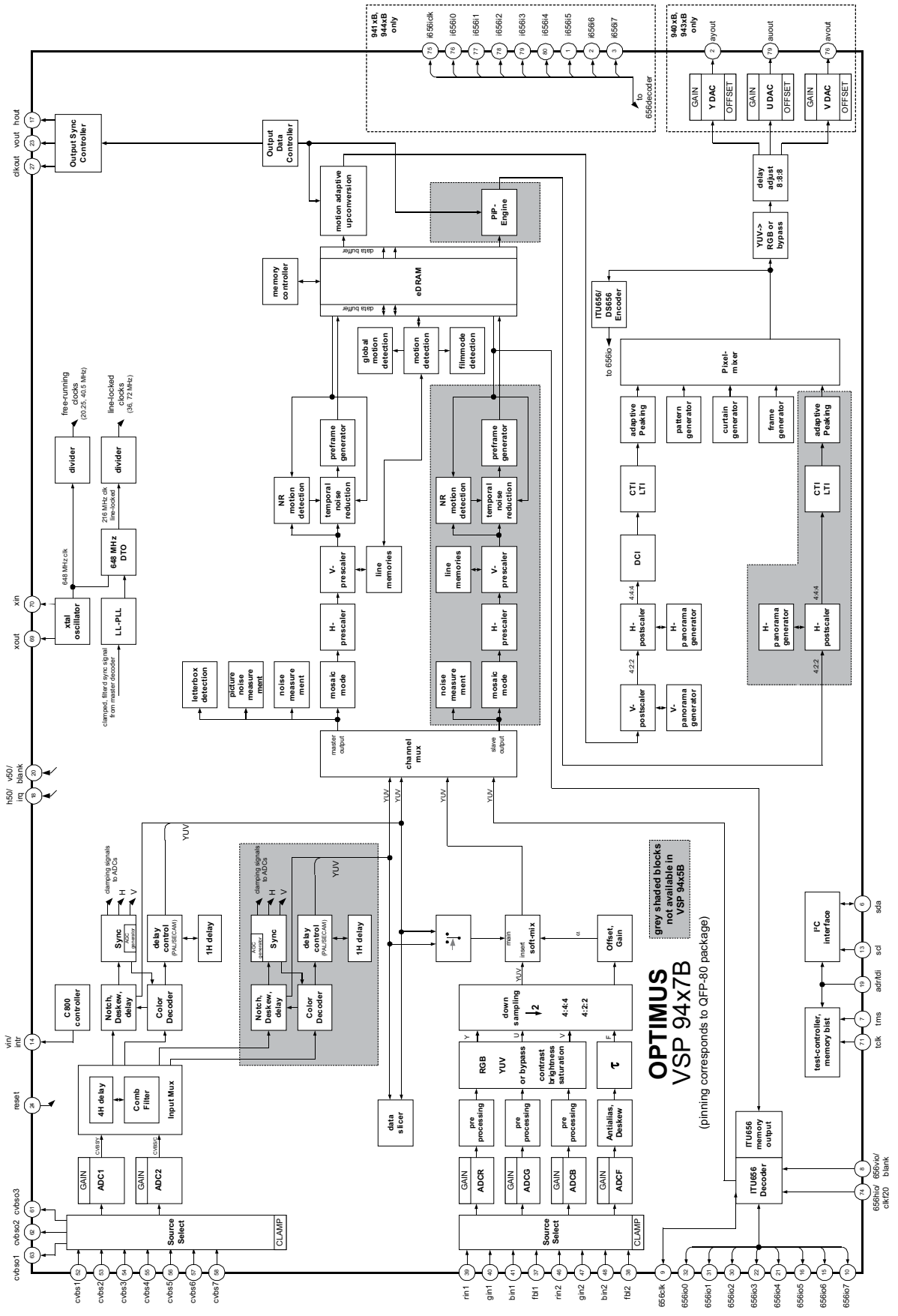
Pin Description

Pin No.	Name	Type	Description
36	VREFH	IQ	Reference voltage
37	VBLO	Q/TTL	Vertical blanking output
38	VREFN	IQ	Ground for VREFH
39	VREFC	I	Reference current input
40	DCI	I	Dark current input for cut off and white level control
41	VDD(A4)	S	Analog supply
42	Y/R 0	I	Luminance or R input
43	U/G 0	I	U signal or G input
44	V/B 0	I	V signal or B input
45	VSS(A4)	S	Analog ground
46	R/Y 1	I	First R or Y input for insertion
47	G/U 1	I	First G or U input for insertion
48	B/V 1	I	First B or V input for insertion
49	FBL1	I	Fast blanking input for RGB1
50	FBL2	I	Fast blanking input for RGB2
51	R2	I	Second R input for insertion
52	G2	I	Second G input for insertion
53	B2	I	Second B input for insertion
54	VDD(MC)	S	Analog supply for RGB output stage
55	ROUT	Q	R output
56	GOUT	Q	G output
57	BOUT	Q	B output
58	SCP	Q	Blanking signal with H- and color burst component (V-component selectable by I²C Bus)
59	VSS(MC)	S	Analog ground for RGB output stage
60	SVM	Q	Luminance output for scan velocity modulation circuit
61	VDD(D)	S	Digital supply
62	VSS(D)	S	Digital ground
63	SSD	I/TTL	Disables softstart
64	SWITCH	Q/TTL	Output of an I²C Bus controlled switch (register 00, bit SW)

*) The external clock mode can not be used with 18.75, 33.75kHz, 35kHz and 38kHz line frequency.

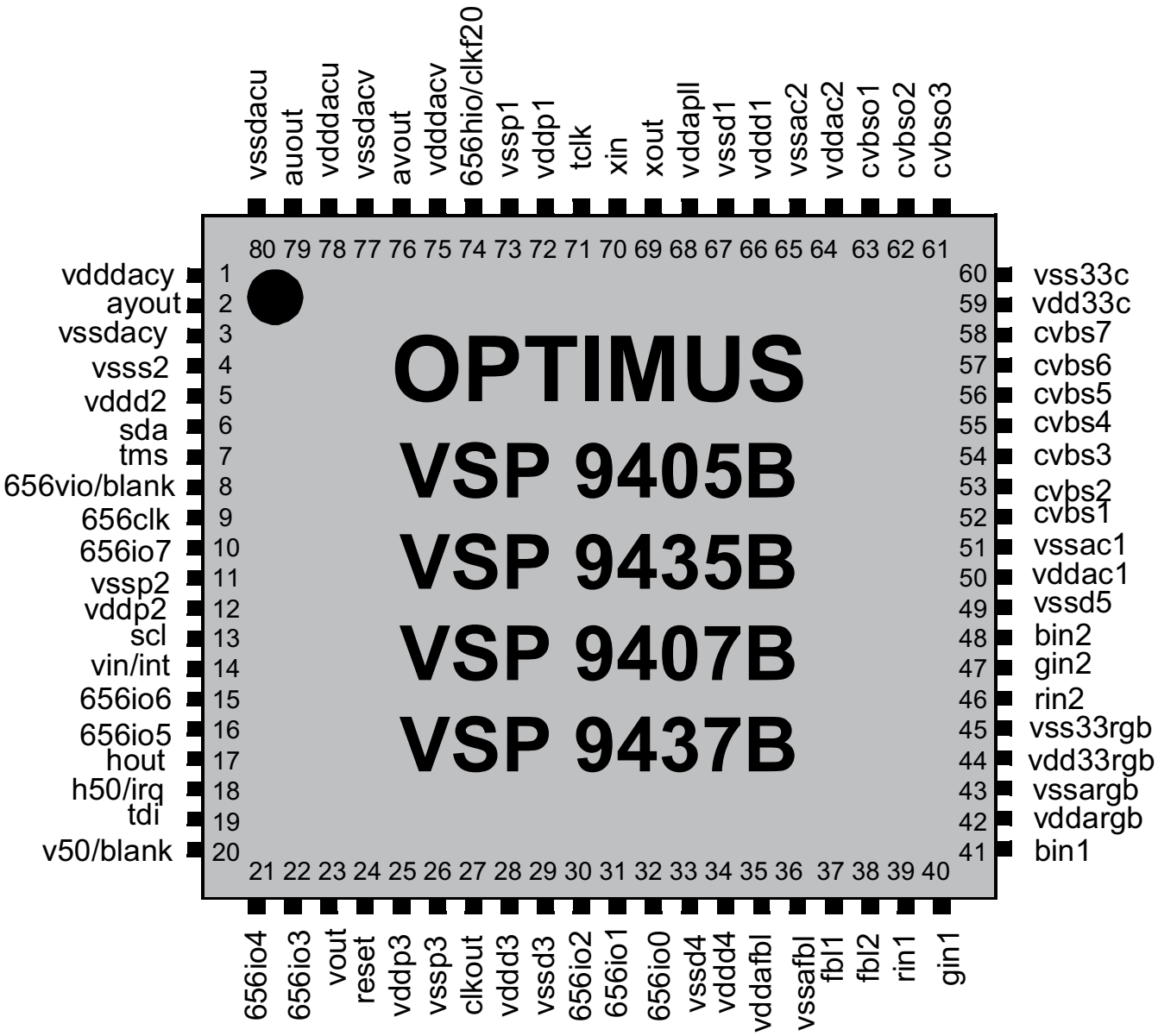
VSP9407 (IC6007)

Block Diagram



VSP9407 (IC6007)

Pinning



VSP9407 (IC6007)

Pin Connections

MQFP 80 (a)	Pin name	Type	function
52	cvbs1	I	CVBS input
53	cvbs2	I	CVBS input
54	cvbs3	I	CVBS input
55	cvbs4	I	CVBS input or Y1
56	cvbs5	I	CVBS input or C1
57	cvbs6	I	CVBS input or Y2
58	cvbs7	I	CVBS input or C2
	cvbs8	I	CVBS input
	cvbs9	I	CVBS input
63	cvbso1	O	CVBS output 1
62	cvbso2	O	CVBS output 2
61	cvbso3	O	CVBS output 3
70	xin	I	Crystal connection 1
69	xout	O	Crystal connection 2
23	vout	I/O	vertical (input) output
17	hout	O	horizontal output
1	vdddacy	S	supply DAC (Y)
3	vssdacy	S	supply DAC (Y)
78	vdddacu	S	supply DAC (U)
80	vssdacu	S	supply DAC (U)
75	vdddacv	S	supply DAC (V)
77	vssdacv	S	supplyDAC (V)
2	ayout	O	Luminance output
79	auout	O	Chrominance output
76	avout	O	Chrominance output
39	rin1	I	R or V in1
40	gin1	I	G or Y in1
41	bin1	I	B of U in1
37	fbl1	I	Fast Blank input 1 (H1)
46	rin2	I	R or V in2
47	gin2	I	G or Y in2
48	bin2	I	B of U in2
38	fbl2	I	Fast Blank input 2 (H2)
14	vin/intr	I/O	vertical sync pulse input for RGB / interrupt output for C800
6	sda	I/O	I²C-Bus data
13	scl	I	I²C-Bus clk
7	tms	I	testmode select
19	adr / tdi	I	I²C address / test data in
24	reset	I	Reset input
27	clkout	O	Output clock
59	vdd33c	S	supply voltage CVBS
60	vss33c	S	supply voltage CVBS

I Input
O Output
S Supply

VSP9407 (IC6007)

Pinning Connections

MQFP 80 (a)	Pin name	Type	function
50	vddac1	S	supply voltage CVBS1
51	vssac1	S	supply voltage CVBS1
64	vddac2	S	supply voltage CVBS2
65	vssac2	S	supply voltage CVBS2
44	vdd33rgb	S	supply voltage RGB
45	vss33rgb	S	supply voltage RGB
42	vddargb	S	supply voltage for RGB
43	vssargb	S	supply voltage for RGB
35	vddafbl	S	supply voltage for FBL
36	vssafbl	S	supply voltage for FBL
68	vddapll	S	supply voltage for PLL
66	vddd1	S	supply voltage for digital
67	vssd1	S	supply voltage for digital
5	vddd2	S	supply voltage for digital
4	vssd2	S	supply voltage for digital
28	vddd3	S	supply voltage for DRAM
29	vssd3	S	supply voltage for digital
34	vddd4	S	supply voltage for digital
33	vssd4	S	supply voltage for digital
	vddd5	S	supply voltage for digital
49	vssd5	S	supply voltage for digital
72	vddp1	S	supply voltage for digital
73	vssp1	S	supply voltage for digital
12	vddp2	S	supply voltage for digital
	vddp2	S	supply voltage for digital
11	vssp2	S	supply voltage for digital
	vssp2	S	supply voltage for digital
25	vddp3	S	supply voltage for digital
	vddp3	S	supply voltage for digital
26	vssp3	S	supply voltage for digital
	vssp3	S	supply voltage for digital
	vddp4	S	supply voltage for digital
	vssp4	S	supply voltage for digital
	vddp5	S	supply voltage for digital
	vssp5	S	supply voltage for digital
	vddp6	S	supply voltage for digital
	vssp6	S	supply voltage for digital
	vddp7	S	supply voltage for digital
	vssp7	S	supply voltage for digital
	vddp8	S	supply voltage for digital
	vssp8	S	supply voltage for digital
	vddpor	S	supply voltage for digital
	vsspdb1	S	bulk supply voltage
71	tclk	I	testclock
18	h50/irq	I/O	Hout 50 Hz / data slicer interrupt output
20	v50/blank	I/O	Vout 50 Hz / blank output
32	656io0	I/O	Digital input / output
31	656io1	I/O	Digital input / output
30	656io2	I/O	Digital input / output
22	656io3	I/O	Digital input / output
21	656io4	I/O	Digital input / output
16	656io5	I/O	Digital input / output
15	656io6	I/O	Digital input / output
10	656io7	I/O	Digital input / output
9	656clk	I/O	Digital input / output clock
74	656hio/ clkf20	I/O	separate H input for 656 / 20.25 clock output
8	656vio/ blank	I/O	separate V input for 656 / blank output
	reserved		(reserved)
	reserved		(reserved)

PARTS LISTING

REPLACEMENT PARTS

Replacement parts which have special safety characteristics are identified in this manual. Electrical components having such features are identified by ⚠ in the Replacement Parts Listing.
The use of a substitute replacement part which does not have the same safety characteristics as the factory recommended is not permitted.
Replacement parts not shown in this service manual may create shock fire, or other hazards.

HOW TO ORDER REPLACEMENT PARTS

To have your order completed promptly and correctly please supply the following information.

1. MODEL NUMBER
2. REF. NO.
3. PART NO.
4. DESCRIPTION
5. CODE
6. QUANTITY

MARK *: SPARE PARTS DELIVERY SECTION

	REF No.	PARTS	DESCRIPTION	*	SN CODE	EX CODE
			PICTURE TUBE			
⚠		VB66ESF0244*N	CRT 28" 16:9 PHILIPS	S	CL	CT
⚠		RCILG0417BMZZ	DEGUSS.COIL ATN01121951 28"16:9 NUCTOR	S	AQ	AX
		LHLDW1514BM00	HOLDER UNEX 2233	S	AA	AA
		LHLDW1525BMZZ	DEG COIL HOLDER	S	AA	AC
		LHLDW1527BM00	HOLDER DEGAUSSING PPSTANDARD NPRS-210	S	AA	AC
		QCNW-2814BMZZ	WIRE (FH) 4 WAYS	S	AC	AG
		QEARC0022BMZZ	C.ERATH DA-50W	S	AP	AZ
			PRINTED WIRING BOARDS (Not replacement item)			
	PWB-A	DUNTK7351CJV0	ADJUST CHASSIS 28JW76E	S	BP	CF
	PWB-B	DUNTK7269BMY2	CRT UNIT INS HAND 28JW76E	S	AW	BK
	PWB-C	DUNTK7359BMV0	DIGITAL MODULE 100Hz M2+SDA94xx 29JW76E	S	BK	CA
	PWB-D	DUNTKB515BMV0	FRONTAL SWITCH/AV 32/28JW76E	S	AS	BD
	PWB-A		**MOTHER UNIT**			
			TUNER			
	TH 0201	RTUNH0145BMZZ	TUNER UV1316/A I G-3	S	AM	AX
			INTEGRATED CIRCUITS			
	IC 0201	RH-IX1808BMZZ	IC TDA9886TS PHILIPS	S	AG	AS
	IC 0202	RH-IX0037CEZZ	IC UPC574J 33V NEC	S	AF	AD
	IC 0301	VHITDA7480/-1	IC TDA7480 THOMSON	S	AF	AK
	IC 0302	VHITDA7480/-1	IC TDA7480 THOMSON	S	AF	AK
	IC 0303	RH-IX1853BMZZ	IC MSP3410G-QA-B8 MICRONAS	S	AR	BC
	IC 0304	VHIM5218L//-1	IC M5218L	S	AA	AD
	IC 0501	RH-IX1786BMZZ	C.I. TDA 7480L THOMSON	S	AD	AL
	IC 0502	VHIBA4558//-1	IC BA4558 SMD	S	AD	AC
	IC 0503	VHIBA4558//-1	IC BA4558 SMD	S	AD	AC
	IC 0601	VHIBA4558//-1	IC BA4558 SMD	S	AD	AC
	IC 0701	RH-IX1556BMZZ	IC BA10393 S0P8 SMD ROHM	S	AC	AD
	IC 0702	RH-IX1674BMZZ	IC KA431AZ SAMSUNG	S	AA	AD
⚠	IC 0703	RH-FX0113BMZZ	OPTOCOUPLER TCET1103G VISHAY	S	AA	AC
	IC 0704	RH-IX1846BMZZ	IC L4931CV33 ST	S	AB	AF
	IC 0705	RH-IX1674BMZZ	IC KA431AZ SAMSUNG	S	AA	AD
	IC 0706	RH-IX1846BMZZ	IC L4931CV33 ST	S	AB	AF
	IC 0708	RH-IX1878BMZZ	IC LM317T ONSEMI	S	AA	AE
	IC 0709	RH-FX0111BMZZ	OPTOCOUPLER TLP165J TOSHIBA	S	AB	AE
			TRANSISTORS			
	Q 0201	RH-TX0243BMZZ	TRT BC857B PHILIPS	S	AA	AA
	Q 0202	RH-TX0232BMZZ	TRT BC847B SMD PHILIPS	S	AA	AA
	Q 0305	RH-TX0232BMZZ	TRT BC847B SMD PHILIPS	S	AA	AA
	Q 0306	RH-TX0243BMZZ	TRT BC857B PHILIPS	S	AA	AA
	Q 0403	RH-TX0232BMZZ	TRT BC847B SMD PHILIPS	S	AA	AA
	Q 0406	RH-TX0243BMZZ	TRT BC857B PHILIPS	S	AA	AA
	Q 0407	RH-TX0232BMZZ	TRT BC847B SMD PHILIPS	S	AA	AA
	Q 0502	VS2SA1905Y+-1	TRT 2SA1905Y TOSHIBA VERTICAL FLYBACK	S	AB	AF
	Q 0503	RH-TX0239BMZZ	TRT SUD15N06-90L SILICONIX	S	AA	AE
	Q 0505	RH-TX0243BMZZ	TRT BC857B PHILIPS	S	AA	AA
	Q 0601	RH-TX0197BMZZ	TRT BU2525AX PHILIPS	S	AG	AP

	REF No.	PARTS	DESCRIPTION	*	SN CODE	EX CODE
	Q 0602	RH-TX0236BMZZ	TRT 2SK2843 TOSHIBA	S	AE	AN
	Q 0603	RH-TX0232BMZZ	TRT BC847B SMD PHILIPS	S	AA	AA
	Q 0604	RH-TX0232BMZZ	TRT BC847B SMD PHILIPS	S	AA	AA
	Q 0605	RH-TX0192BMZZ	TRT KSC2500 SAMSUNG	S	AB	AC
	Q 0606	RH-TX0232BMZZ	TRT BC847B SMD PHILIPS	S	AA	AA
	Q 0607	RH-TX0232BMZZ	TRT BC847B SMD PHILIPS	S	AA	AA
	Q 0608	RH-TX0243BMZZ	TRT BC857B PHILIPS	S	AA	AA
	Q 0609	RH-TX0232BMZZ	TRT BC847B SMD PHILIPS	S	AA	AA
	Q 0611	RH-TX0243BMZZ	TRT BC857B PHILIPS	S	AA	AA
	Q 0612	RH-TXA002WJZZ	TRT 2SK2882 MOS TOSHIBA	S	AC	AK
	Q 0613	RH-TX0244BMZZ	TRT 2SK2839 THOSIBA	S	AB	AF
	Q 0614	RH-TX0232BMZZ	TRT BC847B SMD PHILIPS	S	AA	AA
	Q 0701	CRDAR5531BMV6	RADIATOR SET CHASSIS GA-200	S	--	--
	Q 0702	CRDAR5531BMV6	RADIATOR SET CHASSIS GA-200	S	--	--
	Q 0703	CRDAR5531BMV6	RADIATOR SET CHASSIS GA-200	S	--	--
	Q 0704	RH-TX0243BMZZ	TRT BC857B PHILIPS	S	AA	AA
	Q 0705	RH-TX0232BMZZ	TRT BC847B SMD PHILIPS	S	AA	AA
	Q 0706	RH-TX0230BMZZ	TRT BC557C PHILIPS	S	AA	AA
	Q 0707	RH-SX0003BMZZ	TRIAC BT134W-600 PHILIPS	S	AA	AE
	Q 0708	RH-TX0232BMZZ	TRT BC847B SMD PHILIPS	S	AA	AA
	Q 0709	RH-TX0232BMZZ	TRT BC847B SMD PHILIPS	S	AA	AA
	Q 0710	RH-TX0232BMZZ	TRT BC847B SMD PHILIPS	S	AA	AA
	Q 0712	RH-TX0243BMZZ	TRT BC857B PHILIPS	S	AA	AA
	Q 0713	RH-TX0243BMZZ	TRT BC857B PHILIPS	S	AA	AA
	Q 0714	RH-TX0232BMZZ	TRT BC847B SMD PHILIPS	S	AA	AA
	Q 0720	RH-TX0232BMZZ	TRT BC847B SMD PHILIPS	S	AA	AA
	Q 0721	RH-TX0243BMZZ	TRT BC857B PHILIPS	S	AA	AA
	Q 0723	RH-TX0232BMZZ	TRT BC847B SMD PHILIPS	S	AA	AA
	Q 0724	RH-TX0232BMZZ	TRT BC847B SMD PHILIPS	S	AA	AA
	Q 0797	RH-TXA003WJZZ	TRT 2SK2232 MOS TOSHIBA	S	AC	AH
	Q 0901	RH-TX0232BMZZ	TRT BC847B SMD PHILIPS	S	AA	AA
	Q 0902	RH-TX0232BMZZ	TRT BC847B SMD PHILIPS	S	AA	AA
	Q 1002	RH-TX0232BMZZ	TRT BC847B SMD PHILIPS	S	AA	AA
	Q 1003	RH-TX0232BMZZ	TRT BC847B SMD PHILIPS	S	AA	AA
	Q 1004	RH-TX0232BMZZ	TRT BC847B SMD PHILIPS	S	AA	AA
			DIODES			
	D 0201	RH-DX0623BMZZ	DIODE BA591 SMD PHILIPS	S	AA	AB
	D 0202	RH-DX0623BMZZ	DIODE BA591 SMD PHILIPS	S	AA	AB
	D 0203	RH-DX0623BMZZ	DIODE BA591 SMD PHILIPS	S	AA	AB
	D 0302	RH-EX0549BMZZ	ZENER DIODE TZMC7V5 TFK SMD	S	AA	AA
	D 0303	RH-EX0549BMZZ	ZENER DIODE TZMC7V5 TFK SMD	S	AA	AA
	D 0304	RH-EX0549BMZZ	ZENER DIODE TZMC7V5 TFK SMD	S	AA	AA
	D 0305	RH-EX0549BMZZ	ZENER DIODE TZMC7V5 TFK SMD	S	AA	AA
	D 0306	RH-DX0045BMZZ	DIODE 1N4148	S	AA	AA
	D 0307	RH-EX0550BMZZ	ZENER DIODE TZMC8V2 TFK SMD	S	AA	AA
	D 0308	RH-EX0550BMZZ	ZENER DIODE TZMC8V2 TFK SMD	S	AA	AA
	D 0309	RH-EX0423BMZZ	ZENER DIODE BZX79C22V	S	AA	AB
	D 0402	RH-EX0549BMZZ	ZENER DIODE TZMC7V5 TFK SMD	S	AA	AA
	D 0403	RH-EX0549BMZZ	ZENER DIODE TZMC7V5 TFK SMD	S	AA	AA
	D 0404	RH-EX0549BMZZ	ZENER DIODE TZMC7V5 TFK SMD	S	AA	AA
	D 0405	RH-EX0549BMZZ	ZENER DIODE TZMC7V5 TFK SMD	S	AA	AA
	D 0406	RH-EX0543BMZZ	ZENER DIODE TZMC4V3 TFK SMD	S	AA	AA
	D 0407	RH-EX0549BMZZ	ZENER DIODE TZMC7V5 TFK SMD	S	AA	AA
	D 0408	RH-EX0549BMZZ	ZENER DIODE TZMC7V5 TFK SMD	S	AA	AA
	D 0409	RH-EX0549BMZZ	ZENER DIODE TZMC7V5 TFK SMD	S	AA	AA
	D 0410	RH-EX0549BMZZ	ZENER DIODE TZMC7V5 TFK SMD	S	AA	AA
	D 0411	RH-EX0546BMZZ	ZENER DIODE TZMC5V6 TFK SMD	S	AA	AA
	D 0420	RH-EX0546BMZZ	ZENER DIODE TZMC5V6 TFK SMD	S	AA	AA
	D 0421	RH-EX0544BMZZ	ZENER DIODE TZMC4V7 TFK SMD	S	AA	AA
	D 0422	RH-EX0556BMZZ	ZENER DIODO TZMC15 TFK SMD	S	AA	AA
	D 0427	RH-EX0549BMZZ	ZENER DIODE TZMC7V5 TFK SMD	S	AA	AA
	D 0431	RH-EX0554BMZZ	ZENER DIODE TZMC12 TFK SMD	S	AA	AA
	D 0432	RH-EX0554BMZZ	ZENER DIODE TZMC12 TFK SMD	S	AA	AA
	D 0433	RH-EX0554BMZZ	ZENER DIODE TZMC12 TFK SMD	S	AA	AA
	D 0434	RH-EX0554BMZZ	ZENER DIODE TZMC12 TFK SMD	S	AA	AA
	D 0435	RH-EX0554BMZZ	ZENER DIODE TZMC12 TFK SMD	S	AA	AA
	D 0436	RH-EX0554BMZZ	ZENER DIODE TZMC12 TFK SMD	S	AA	AA
	D 0437	RH-EX0554BMZZ	ZENER DIODE TZMC12 TFK SMD	S	AA	AA
	D 0438	RH-EX0554BMZZ	ZENER DIODE TZMC12 TFK SMD	S	AA	AA
	D 0439	RH-EX0554BMZZ	ZENER DIODE TZMC12 TFK SMD	S	AA	AA
	D 0507	RH-EX0562BMZZ	ZENER DIODE TZMC27 TFK SMD	S	AA	AA

REF No.	PARTS	DESCRIPTION	*	SN CODE	EX CODE
D 0508	RH-DX0045BMZZ	DIODE 1N4148	S	AA	AA
D 0510	RH-DX0631BMZZ	DIODE 1N4935 G.SEMICONDUCTOR	S	AA	AA
D 0511	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S	AA	AA
D 0512	RH-EX0564BMZZ	ZENER DIODE TZMC33 TFK SMD	S	AA	AA
D 0604	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S	AA	AA
D 0605	RH-DXA011WJZZ	DIODE SB360 GENERAL	S	AA	AD
D 0606	RH-DX0045BMZZ	DIODE 1N4148	S	AA	AA
D 0607	RH-DX0634BMZZ	DIODE RGP02-16E G.SEMICONDUCTOR	S	AA	AB
D 0608	RH-DX0045BMZZ	DIODE 1N4148	S	AA	AA
D 0609	RH-DX0518BMZZ	DIODE 1N5819 G.INSTRUMENTS	S	AA	AB
D 0610	RH-DX0590BMZZ	DIODE MBR1100RL MOTOROLA	S	AD	AE
D 0611	RH-DX0632BMZZ	DIODE 1N4936 G.SEMICONDUCTOR	S	AA	AA
D 0612	RH-DX0631BMZZ	DIODE 1N4935 G.SEMICONDUCTOR	S	AA	AA
D 0613	RH-DX0631BMZZ	DIODE 1N4935 G.SEMICONDUCTOR	S	AA	AA
D 0615	RH-EX0560BMZZ	ZENER DIODE TZMC22 TFK SMD	S	AA	AA
D 0616	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S	AA	AA
D 0617	RH-DX0045BMZZ	DIODE 1N4148	S	AA	AA
D 0618	RH-DX0045BMZZ	DIODE 1N4148	S	AA	AA
D 0619	RH-DX0045BMZZ	DIODE 1N4148	S	AA	AA
D 0620	RH-EX0421BMZZ	ZENER DIODE BZX79C18V	S	AA	AA
D 0622	RH-EX0554BMZZ	ZENER DIODE TZMC12 TFK SMD	S	AA	AA
D 0623	RH-EX0544BMZZ	ZENER DIODE TZMC4V7 TFK SMD	S	AA	AA
D 0624	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S	AA	AA
D 0625	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S	AA	AA
D 0631	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S	AA	AA
D 0633	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S	AA	AA
D 0636	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S	AA	AA
D 0637	RH-DX0045BMZZ	DIODE 1N4148	S	AA	AA
D 0638	RH-DX0642BMZZ	DAMPER DIODE BY459X-1500	S	AB	AG
D 0641	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S	AA	AA
D 0642	RH-EX0568BMZZ	ZENER DIODE TZMC47 TFK SMD	S	AA	AA
D 0644	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S	AA	AA
D 0701	RH-DX0641BMZZ	DIODE GPP20J GS	S	AA	AB
D 0702	RH-DX0641BMZZ	DIODE GPP20J GS	S	AA	AB
D 0703	RH-DX0641BMZZ	DIODE GPP20J GS	S	AA	AB
D 0704	RH-DX0641BMZZ	DIODE GPP20J GS	S	AA	AB
D 0707	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S	AA	AA
D 0708	RH-EX0561BMZZ	ZENER DIODE TZMC24 TFK SMD	S	AA	AA
D 0711	RH-DX0045BMZZ	DIODE 1N4148	S	AA	AA
D 0712	RH-DX0618BMZZ	DIODE BYV28-600 VISHAY PREFOR 17.5MM	S	AA	AE
D 0713	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S	AA	AA
D 0714	RH-EX0548BMZZ	ZENER DIODE TZMC6V8 TFK SMD	S	AA	AA
D 0715	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S	AA	AA
D 0716	RH-EX0584BMZZ	ZENER DIODE TZMB6V2 TFK SMD 2%	S	AA	AA
D 0717	RH-DX0045BMZZ	DIODE 1N4148	S	AA	AA
D 0718	RH-DX0045BMZZ	DIODE 1N4148	S	AA	AA
D 0719	RH-DX0621BMZZ	DIODE BYV27/100 VISHAY	S	AA	AC
D 0720	RH-DX0643BMZZ	DIODE SF26 ACPA	S	AA	AC
D 0721	RH-DX0643BMZZ	DIODE SF26 ACPA	S	AA	AC
D 0722	RH-DX0605BMZZ	DIODE MBR340RL MOTOROLA	S	AA	AE
D 0723	RH-EX0550BMZZ	ZENER DIODE TZMC8V2 TFK SMD	S	AA	AA
D 0725	RH-EX0561BMZZ	ZENER DIODE TZMC24 TFK SMD	S	AA	AA
D 0727	RH-DX0621BMZZ	DIODE BYV27/100 VISHAY	S	AA	AC
D 0728	RH-DX0045BMZZ	DIODE 1N4148	S	AA	AA
D 0729	RH-DX0579BMZZ	DIODE 1N4937 ACPA	S	AA	AB
D 0730	RH-EX0584BMZZ	ZENER DIODE TZMB6V2 TFK SMD 2%	S	AA	AA
D 0731	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S	AA	AA
D 0732	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S	AA	AA
D 0733	RH-EX0584BMZZ	ZENER DIODE TZMB6V2 TFK SMD 2%	S	AA	AA
D 0734	RH-EX0424BMZZ	ZENER DIODE BZX79C24V	S	AA	AA
D 0735	RH-EX0424BMZZ	ZENER DIODE BZX79C24V	S	AA	AA
D 0736	RH-DX0579BMZZ	DIODE 1N4937 ACPA	S	AA	AB
D 0737	RH-DX0045BMZZ	DIODE 1N4148	S	AA	AA
D 0740	RH-DX0577BMZZ	DIODE 1N4935 ACPA	S	AB	AE
D 0741	RH-EX0543BMZZ	ZENER DIODE TZMC4V3 TFK SMD	S	AA	AA
D 0743	RH-EX0561BMZZ	ZENER DIODE TZMC24 TFK SMD	S	AA	AA
D 0745	RH-DX0643BMZZ	DIODE SF26 ACPA	S	AA	AC
D 0746	RH-DX0045BMZZ	DIODE 1N4148	S	AA	AA
D 0747	RH-EX0544BMZZ	ZENER DIODE TZMC4V7 TFK SMD	S	AA	AA
D 0748	RH-EX0537BMZZ	ZENER DIODE TZMC2V4 TFK SMD	S	AA	AA
D 0750	RH-EX0552BMZZ	ZENER DIODE TZMC10 TFK SMD	S	AA	AA
D 0752	RH-SX0004BMZZ	DIAC BR100/03 PHILIPS	S	AA	AC
D 0753	RH-DX0643BMZZ	DIODE SF26 ACPA	S	AA	AC
D 0798	RH-DX0621BMZZ	DIODE BYV27/100 VISHAY	S	AA	AC
D 0901	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S	AA	AA
D 0902	RH-EX0554BMZZ	ZENER DIODE TZMC12 TFK SMD	S	AA	AA
D 0903	RH-EX0421BMZZ	ZENER DIODE BZX79C18V	S	AA	AA
D 1017	RH-EX0480BMZZ	ZENER DIODE BZX79 B5V1 2%	S	AA	AA
D 1018	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S	AA	AA
D 1019	RH-EX0544BMZZ	ZENER DIODE TZMC4V7 TFK SMD	S	AA	AA
D 1020	RH-EX0544BMZZ	ZENER DIODE TZMC4V7 TFK SMD	S	AA	AA
D 1021	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S	AA	AA
		PACKAGED CIRCUITS			
X 0201	RCRSB0201BMZZ	CRYSTAL 4 MHZ	S	AK	AM
X 0301	RCRSB0203BMZZ	CRYSTAL 18,432 MHZ	S	AD	AG
POR701	RMPTP0001BMZZ	PTC B59250-C1080-B70	S	AA	AD
		COILS			
L 0202	VP-DF120K0000	PEAK COIL 12UH 10%	S	AA	AA
L 0203	VP-CF6R8K0000	PEAK COIL 6.8UH 10%	S	AA	AA
L 0301	VP-DF100K0000	PEAK COIL 10UH 10%	S	AA	AA
L 0302	VP-XF3R3K0000	PEAK COIL 3.3UH 10% 1/8W	S	AA	AB
L 0315	VP-CF3R3K0000	PEAK COIL 3.3UH 10%	S	AB	AB
L 0316	VP-CF3R3K0000	PEAK COIL 3.3UH 10%	S	AB	AB
L 0318	VP-CF220K0000	PEAK COIL 22UH 10%	S	AA	AA
L 0319	VP-CF220K0000	PEAK COIL 22UH 10%	S	AA	AA
L 0350	VP-CF3R3K0000	PEAK COIL 3.3UH 10%	S	AB	AB
L 0351	VP-CF3R3K0000	PEAK COIL 3.3UH 10%	S	AB	AB
L 0352	RCILP0195CEZZ	COIL LHL08TB680K TAIYO YUDEN	S	AA	AC
L 0353	RCILP0195CEZZ	COIL LHL08TB680K TAIYO YUDEN	S	AA	AC
L 0501	RCILP0271BMZZ	COIL BC-400/K DIEMEN	S	AD	AG
L 0601	VP-CF3R3K0000	PEAK COIL 3.3UH 10%	S	AB	AB
L 0602	VP-CF3R3K0000	PEAK COIL 3.3UH 10%	S	AB	AB
L 0605	RCILZA016WJZZ	LIN. COIL 3128 138 5615.2 PHILIPS GA200	S	AB	AG
L 0606	VP-DF3R3K0000	PEAK COIL 3,3UH 10%	S	AB	AB
L 0609	RCILPA052WJZZ	COIL LHL08TB1R5M TAIYO YUDEN	S	AA	AB
⚠ L 0701	RCILF0108BMZZ	COIL 472839.00 THOMSON	S	AF	AL
L 0702	VP-CF3R3K0000	PEAK COIL 3.3UH 10%	S	AB	AB
L 0705	RCILP0177CEZZ	COIL LHL08TB330K TAIYO YUDEN	S	AA	AB
		CERAMIC FILTERS			
SF 0201	RFILC0278BMZZ	SAW FILTER K3953M SIEMENS	S	AK	AM
SF 0202	RFILC0294BMZZ	SAW FILTER K9456 EPCOS	S	AA	AA
		TRANSFORMERS			
⚠ T 0601	RTRNF2089BMZZ	FBT CHASSIS GA-200 16x9	S	AQ	BB
⚠ T 0701	RTRNZ0591BMZZ	CHOPPER CHASSIS GA-100 DIEMEN	S	AE	AN
T 0702	RTRNZ0586BMZZ	BOOST INDUCTOR PFC HR 6R4 15020-00	S	AD	AM
		CAPACITORS			
C 0201	RC-FZ9474BMNJ	POL FILM C 470NF 5% 63V	S	AB	AD
C 0202	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 0203	VCKYCY1HF223Z	SC CAPACITOR 0.022UF 50V TAPED	S	AA	AA
C 0204	VCEA0A1CW107M	ELEC C 100UF 20% 16V	S	AA	AA
C 0205	RC-FZ9224BMNJ	POL FILM C 220NF 5% 63V	S	AA	AC
C 0206	VCKYCY1HF103Z	CHIP CAP 0.01UF/50V	S	AA	AA
C 0207	VCKYCY1HB152K	GRM39B 152K 50 (1608)SMD CAPACITOR	S	AA	AA
C 0208	VCKYCY1HF103Z	CHIP CAP 0.01UF/50V	S	AA	AA
C 0209	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 0210	VCKYCY1HF103Z	CHIP CAP 0.01UF/50V	S	AA	AA
C 0211	VCKYCY1HF103Z	CHIP CAP 0.01UF/50V	S	AA	AA
C 0212	VCEA0A1AW477M	E.CAPACITOR 470UF 10V 6.3x11	S	AA	AA
C 0215	RC-FZ9334BMNJ	POL FILM C 330NF 5% 63V	S	AA	AC
C 0218	VCKYCY1HF103Z	CHIP CAP 0.01UF/50V	S	AA	AA
C 0219	VCKYCY1HB391K	S. CHIP CAP 390PF/50V TAPED	S	AA	AA
C 0221	RC-FZ9334BMNJ	POL FILM C 330NF 5% 63V	S	AA	AC
C 0222	VCEAGA0JW107M	ELEC C 100UF 20% 6,3V	S	AA	AA
C 0301	VCEA0A1HW106M	ELEC C 10UF 20% 50V	S	AA	AA
C 0302	VCEA0A1HW106M	ELEC C 10UF 20% 50V	S	AA	AA
C 0303	VCEA0A1CW106M	ELEC C 10UF 20% 16V	S	AA	AA
C 0304	VCEA0A1CW106M	ELEC C 10UF 20% 16V	S	AA	AA
C 0305	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S	AA	AA
C 0306	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S	AA	AA

REF No.	PARTS	DESCRIPTION	*	SN CODE	EX CODE
C 0307	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 0308	VCEA0A1HW335M	ELEC C 3,3UF 20% 50V	S	AA	AA
C 0309	VCEA0A1AW337M	ELEC C 330UF 20% 10V	S	AA	AA
C 0310	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 0311	VCEA0A1CW106M	ELEC C 10UF 20% 16V	S	AA	AA
C 0312	VCEA0A1CW106M	ELEC C 10UF 20% 16V	S	AA	AA
C 0313	VCKYCY1HF473Z	S. CHIP CAP 0.047UF/50V	S	AA	AA
C 0314	VCKYCY1CF334Z	S. CHIP CAP. 0.33UF/16V TAPED	S	AA	AA
C 0315	VCKYCY1CF334Z	S. CHIP CAP. 0.33UF/16V TAPED	S	AA	AA
C 0316	RC-FZ9334BMNJ	POL FILM C 330NF 5% 63V	S	AA	AC
C 0317	RC-FZ9334BMNJ	POL FILM C 330NF 5% 63V	S	AA	AC
C 0318	RC-FZ9334BMNJ	POL FILM C 330NF 5% 63V	S	AA	AC
C 0319	RC-FZ9334BMNJ	POL FILM C 330NF 5% 63V	S	AA	AC
C 0320	VCEA0A1CW106M	ELEC C 10UF 20% 16V	S	AA	AA
C 0321	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 0322	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 0323	VCCCCY1HH470J	S. CHIP CAP 47PF/50V (TAPED)	S	AA	AA
C 0324	VCCCCY1HH470J	S. CHIP CAP 47PF/50V (TAPED)	S	AA	AA
C 0325	VCCCCY1HH470J	S. CHIP CAP 47PF/50V (TAPED)	S	AA	AA
C 0326	VCCCCY1HH5R0C	S. CAPACITOR TAPED	S	AA	AA
C 0327	VCCCCY1HH5R0C	S. CAPACITOR TAPED	S	AA	AA
C 0328	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 0329	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 0330	VCEA0A1AW337M	ELEC C 330UF 20% 10V	S	AA	AA
C 0331	VCCCCY1HH681J	GRM39CK 681J 50 (1608)SMD CAPACITOR	S	AA	AA
C 0334	VCCCCY1HH681J	GRM39CK 681J 50 (1608)SMD CAPACITOR	S	AA	AA
C 0337	VCCCCY1HH681J	GRM39CK 681J 50 (1608)SMD CAPACITOR	S	AA	AA
C 0338	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S	AA	AA
C 0340	VCCCCY1HH681J	GRM39CK 681J 50 (1608)SMD CAPACITOR	S	AA	AA
C 0341	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S	AA	AA
C 0343	VCCCCY1HH681J	GRM39CK 681J 50 (1608)SMD CAPACITOR	S	AA	AA
C 0344	VCCCCY1HH681J	GRM39CK 681J 50 (1608)SMD CAPACITOR	S	AA	AA
C 0347	VCKYCY1HB222K	S CHIP CAPACITOR 0.0022UF/50V TAPED	S	AA	AA
C 0348	VCKYCY1HB222K	S CHIP CAPACITOR 0.0022UF/50V TAPED	S	AA	AA
C 0350	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 0351	VCEA0A1EW227M	ELEC C 220UF 20% 25V	S	AA	AA
C 0352	RC-FZ9104BMNJ	POL FILM C 100NF 5% 63V	S	AA	AB
C 0353	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 0354	VCCCCY1HH101J	S. CHIP CAP 100PF/50V TAPED	S	AA	AA
C 0356	RC-FZ9334BMNJ	POL FILM C 330NF 5% 63V	S	AA	AC
C 0357	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S	AA	AA
C 0358	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 0359	VCKYCY1HB472K	S.CHIP CAP 4700PF/50V T	S	AA	AA
C 0360	VCKYCY1HB561K	S. CAPACITOR 560PF/50V	S	AA	AA
C 0361	RC-FZ9474BMNJ	POL FILM C 470NF 5% 63V	S	AB	AD
C 0362	VCEA0A1HW474M	ELEC C 0,47UF 20% 50V	S	AA	AA
C 0363	VCEA0A1EW227M	ELEC C 220UF 20% 25V	S	AA	AA
C 0364	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 0365	VCEA0A1EW227M	ELEC C 220UF 20% 25V	S	AA	AA
C 0366	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 0367	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 0368	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 0369	VCCCCY1HH101J	S. CHIP CAP 100PF/50V TAPED	S	AA	AA
C 0370	RC-FZ9334BMNJ	POL FILM C 330NF 5% 63V	S	AA	AC
C 0371	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S	AA	AA
C 0372	VCEA0A1HW474M	ELEC C 0,47UF 20% 50V	S	AA	AA
C 0373	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 0374	VCKYCY1HB472K	S.CHIP CAP 4700PF/50V T	S	AA	AA
C 0375	VCKYCY1HB561K	S. CAPACITOR 560PF/50V	S	AA	AA
C 0376	RC-FZ9474BMNJ	POL FILM C 470NF 5% 63V	S	AB	AD
C 0377	VCEA0A1HW105M	ELEC C 1UF 20% 50V	S	AA	AA
C 0378	VCEA0A1EW227M	ELEC C 220UF 20% 25V	S	AA	AA
C 0379	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 0382	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 0383	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S	AA	AA
C 0384	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S	AA	AA
C 0385	VCKYCY1CF224Z	S.C.CAP 0.22UF 16V TAPED	S	AA	AA
C 0386	VCKYCY1CF224Z	S.C.CAP 0.22UF 16V TAPED	S	AA	AA
C 0387	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 0388	RC-FZ9334BMNJ	POL FILM C 330NF 5% 63V	S	AA	AC
C 0389	RC-FZ9334BMNJ	POL FILM C 330NF 5% 63V	S	AA	AC
C 0393	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S	AA	AA

REF No.	PARTS	DESCRIPTION	*	SN CODE	EX CODE
C 0394	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S	AA	AA
C 0403	VCKYCY1HF103Z	CHIP CAP 0.01UF/50V	S	AA	AA
C 0412	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S	AA	AA
C 0417	VCEA0A1CW476M	ELEC C 47UF 20% 16V	S	AA	AA
C 0422	VCEA0A1AW227M	ELEC C 220UF 20% 10V	S	AA	AA
C 0432	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S	AA	AA
C 0433	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S	AA	AA
C 0502	VCKYCY1CF334Z	S. CHIP CAP. 0.33UF/16V TAPED	S	AA	AA
C 0503	VCCCCY1HH101J	S. CHIP CAP 100PF/50V TAPED	S	AA	AA
C 0504	RC-FZ9224BMNJ	POL FILM C 220NF 5% 63V	S	AA	AC
C 0505	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 0506	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 0507	VCKYCY1HB472K	S.CHIP CAP 4700PF/50V T	S	AA	AA
C 0508	VCKYCY1HB561K	S. CAPACITOR 560PF/50V	S	AA	AA
C 0510	VCKYCY1CF334Z	S. CHIP CAP. 0.33UF/16V TAPED	S	AA	AA
C 0511	VCEA0A1HW225M	ELEC C 2,2UF 20% 50V	S	AA	AA
C 0520	VCEA0A1VW477M	ELEC C 470uF 35V	S	AA	AB
C 0522	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 0524	RC-FZ9683BMNJ	POL FILM C 68NF 5% 63V	S	AA	AB
C 0525	VCKYCY1HF473Z	S. CHIP CAP 0.047UF/50V	S	AA	AA
C 0526	VCEA0A1EW227M	ELEC C 220UF 20% 25V	S	AA	AA
C 0534	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S	AA	AA
C 0535	VCEA0A1HW106M	ELEC C 10UF 20% 50V	S	AA	AA
C 0540	VCKYCY1HB332K	s.chip cap 3300pf /50v	S	AA	AA
C 0541	VCCCCY1HH331J	GRM39CK 331J 50 (1608)SMD CAPACITOR	S	AA	AA
C 0601	RC-FZA076WJZZ	C PP 12NF 2KV B32683-A2123J EPCOS	S	AB	AE
C 0602	RC-FZ0237BMZZ	POLIP CAP 8n2 630V 222237514822 BC	S	AA	AC
C 0603	RC-FZ9473BMNJ	POL FILM C 47NF 5% 63V	S	AA	AC
C 0604	VCCCCY1HH391J	GRM39CK 391J 50 (1608)SMD CAPACITOR	S	AA	AA
C 0605	VCKYCY1HB222K	S CHIP CAPACITOR 0.0022UF/50V TAPED	S	AA	AA
C 0606	VCKYCY1AB224K	GRM39B 224K 10 (1608)SMD CAPACITOR	S	AA	AA
C 0607	VCCCCY1HH220J	S. CHIP CAP 22PF/50V TAPED	S	AA	AA
C 0608	VCKYTV1HB104K	CERAM C 100NF 50V 2125SMD	S	AA	AA
C 0609	RC-EZ0729CEZZ	ELEC C 470NF 10V RUBYCON 10YXG470MKC	S	AA	AC
C 0610	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S	AA	AA
C 0612	VCCCCY1HH681J	GRM39CK 681J 50 (1608)SMD CAPACITOR	S	AA	AA
C 0613	RC-FZ9474BMNJ	POL FILM C 470NF 5% 63V	S	AB	AD
C 0617	RC-FZ0241BMZZ	CPP 220NF 400V 15mm B32652-A4224-J EPCOS	S	AA	AC
C 0618	VCEA0A1CW227M	E CAPACITOR 220UF 16V 6.3x11	S	AA	AB
C 0619	RC-FZ0198BMZZ	POL C 100NF 10% 250V 222236545104 BC	S	AA	AB
C 0620	VCKYPA2HB222K	CERAM C 2,2NF 10% 500V	S	AA	AB
C 0621	VCKYPA2HB222K	CERAM C 2,2NF 10% 500V	S	AA	AB
C 0622	VCEA0A1VW477M	ELEC C 470uF 35V	S	AA	AB
C 0623	VCEA0A1VW477M	ELEC C 470uF 35V	S	AA	AB
C 0624	RC-FZ0240BMZZ	CPP 180NF 400V 15mm B32652-A4184-J EPCOS	S	AA	AC
C 0625	VCKYPA2HB102K	CERAM C 1NF 10% 500V	S	AA	AA
C 0626	VCEA0A1HW106M	ELEC C 10UF 20% 50V	S	AA	AA
C 0627	VCCSPA2HL560K	CERAM C 56PF 10% 500V	S	AA	AA
C 0628	RC-FZ0216BMZZ	POL C 330PF 2KV 222237544331 BC	S	AA	AC
C 0629	VCKYCY1HF683Z	GRM39F 683Z 50 (1608)SMD CAPACITOR	S	AA	AA
C 0630	RC-FZ9223BMNJ	POL FILM C 22NF 5% 63V	S	AA	AB
C 0631	VCKYCY1HB222K	S CHIP CAPACITOR 0.0022UF/50V TAPED	S	AA	AA
C 0632	VCCCCY1HH220J	S. CHIP CAP 22PF/50V TAPED	S	AA	AA
C 0634	RC-EZA086WJZZ	ELEC C 10uF 250V 105º YXA RUBYCON	S	AA	AC
C 0635	VCCCCY1HH680J	S. CHIP CAP 68PF/50V TAPED	S	AA	AA
C 0636	VCEA0A1EW107M	E. CAPACITOR 100UF 25V 6.3x11	S	AA	AA
C 0637	VCEA0A1EW107M	E. CAPACITOR 100UF 25V 6.3x11	S	AA	AA
C 0639	VCKYPA2HB102K	CERAM C 1NF 10% 500V	S	AA	AA
C 0640	RC-EZ0729CEZZ	ELEC C 470NF 10V RUBYCON 10YXG470MKC	S	AA	AC
C 0641	VCKYCY1CF474Z	GRM39F 474Z 16 (1608)SMD CAPACITOR	S	AA	AA
⚠ C 0701	RC-FZ0219BMZZ	C 470NF 275V X2 B81130-C1474-M SIEMENS	S	AA	AD
C 0702	RC-KZ0029CEZZ	CERAM C 10NF 80,20% 250V	S	AC	AC
C 0703	RC-KZ0029CEZZ	CERAM C 10NF 80,20% 250V	S	AC	AC
C 0704	RC-KZ0029CEZZ	CERAM C 10NF 80,20% 250V	S	AC	AC
C 0705	RC-FZ0205BMZZ	PP FILM C 4N7 630V 2222 375 16472 BC	S	AA	AB
C 0706	RC-FZ7684BMNJ	PP FILM C 680NF 5% 400V	S	AE	AH
C 0707	VCEA0A1EW107M	E. CAPACITOR 100UF 25V 6.3x11	S	AA	AA
C 0708	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 0709	VCEA0A1HW106M	ELEC C 10UF 20% 50V	S	AA	AA
C 0710	RC-FZ9223BMNJ	POL FILM C 22NF 5% 63V	S	AA	AB
C 0712	VCEAGA2CW105M	ELEC C 1UF 20% 160V	S	AA	AB
C 0713	RC-EZA036WJZZ	ELEC C 68uF 450V CHEMI-CON KMK 18x35,5	S	AD	AL

	REF No.	PARTS	DESCRIPTION	*	SN CODE	EX CODE
	C 0714	VRS-CY1JF681J	S. CHIP RES. 680-OHM TAPED	S	AA	AA
	C 0715	VCKYCY1HF683Z	GRM39F 683Z 50 (1608)SMD CAPACITOR	S	AA	AA
	C 0716	VCKYCY1CF474Z	GRM39F 474Z 16 (1608)SMD CAPACITOR	S	AA	AA
	C 0717	RC-FZ9103BMNJ	POL FILM C 10NF 5% 63V	S	AA	AB
	C 0718	VCCCCY1HH471J	GRM39CK 471J 50 (1608)SMD CAPACITOR	S	AA	AA
	C 0719	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
	C 0720	VCEA0A1AW228M	ELEC C 2200UF 20% 10V	S	AA	AC
	C 0721	RC-FZ9103BMNJ	POL FILM C 10NF 5% 63V	S	AA	AB
	C 0722	VCKYCY1EB273K	GRM39B 273K 25 (1608)SMD CAPACITOR	S	AA	AA
	C 0723	VCCCCY1HH471J	GRM39CK 471J 50 (1608)SMD CAPACITOR	S	AA	AA
	C 0724	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
	C 0725	RC-FZ0205BMZZ	PP FILM C 4N7 630V 2222 375 16472 BC	S	AA	AB
	C 0726	VCEA0A1EW228M	ELEC C 2200UF 20% 25V	S	AA	AD
	C 0727	VCEA0A1EW228M	ELEC C 2200UF 20% 25V	S	AA	AD
	C 0728	RC-EZA035WJZZ	ELEC C 100UF 200V LOW INPEDANCE	S	AB	AF
	C 0729	VCEAGA0JW477M	ELEC C 470UF 20% 6,3V	S	AA	AA
	C 0730	VCKYPA2HB271K	CERAM C 270PF 10% 500V	S	AA	AA
	C 0731	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
	C 0732	VCEA0A1EW108M	ELEC C 1000UF 20% 25V	S	AA	AC
	C 0733	RC-EZ0753CEZZ	ELEC C 470NF 35V RUBYCON 35YXG470MKC	S	AA	AC
	C 0734	VCEA0A1CW476M	ELEC C 47UF 20% 16V	S	AA	AA
	C 0735	VCEAGA0JW477M	ELEC C 470UF 20% 6,3V	S	AA	AA
	C 0736	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
	C 0737	VCEA0A1EW108M	ELEC C 1000UF 20% 25V	S	AA	AC
	C 0738	RC-FZ9563BMNJ	POL FILM C 56NF 5% 63V	S	AA	AC
	C 0739	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
	C 0740	VCCCCY1HH221J	S. CHIP CAP 220PF/50V TAPED	S	AA	AA
	C 0741	VCKYCY1CF474Z	GRM39F 474Z 16 (1608)SMD CAPACITOR	S	AA	AA
	C 0742	VCEA0A1HW226M	ELEC C 22UF 20% 50V	S	AA	AA
	C 0743	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
⚠	C 0746	RC-FZ0188BMZZ	C B81130-C1334-M 330NF 275V X2 SIEMENS	S	AA	AD
	C 0748	VCEA0A1VW227M	ELEC C 220UF 20% 35V	S	AA	AA
	C 0749	VCKYTV1CF105Z	CERAM C 1UF 16V 2125SMD	S	AA	AA
	C 0751	VCEA0A1HW105M	ELEC C 1UF 20% 50V	S	AA	AA
	C 0752	VCEA0A1CW106M	ELEC C 10UF 20% 16V	S	AA	AA
	C 0754	VCCCCY1HH101J	S. CHIP CAP 100PF/50V TAPED	S	AA	AA
	C 0755	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S	AA	AA
	C 0756	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
	C 0796	RC-KZ0031CEZZ	CERAM C 100PF 2KV	S	AA	AB
	C 0798	RC-KZ0035CEZZ	CERAM C 220PF 2KV	S	AA	AC
⚠	C 0799	RC-KZ0106GEZZ	CERAM C DE1410 E332M-KX	S	AB	AC
	C 0902	VCEA0A1HW226M	ELEC C 22UF 20% 50V	S	AA	AA
	C 0903	VCEA0A1EW476M	ELEC C 47UF 20% 25V	S	AA	AA
	C 0904	VCKYTV1CF105Z	CERAM C 1UF 16V 2125SMD	S	AA	AA
	C 0905	VCKYCY1CF474Z	GRM39F 474Z 16 (1608)SMD CAPACITOR	S	AA	AA
	C 1022	VCEA0A1HW106M	ELEC C 10UF 20% 50V	S	AA	AA
	C 1031	VCEAGA0JW337M	ELEC C 330UF 20% 6,3V	S	AA	AA
	C 1043	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S	AA	AA
	C 1044	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S	AA	AA
	C 1045	VCCCCY1HH101J	S. CHIP CAP 100PF/50V TAPED	S	AA	AA
	C 1046	VCCCCY1HH101J	S. CHIP CAP 100PF/50V TAPED	S	AA	AA
	C 1049	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S	AA	AA
	C 3313	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S	AA	AA
			RESISTORS			
	R 0201	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S	AA	AA
	R 0202	VRD-RA2BE101J	RES 100 OHM 5% 1/8W	S	AA	AA
	R 0203	VRD-RA2BE101J	RES 100 OHM 5% 1/8W	S	AA	AA
	R 0204	VRS-CY1JF223J	S.CHOP REG 22K-OHM T	S	AA	AA
	R 0205	VRS-CY1JF221J	S. CHIP RES. 220-OHM TAPED	S	AA	AA
	R 0206	VRS-CY1JF562J	S. CHIP RES. 5.6K-OHM TAPED	S	AA	AA
	R 0207	VRS-CY1JF151J	S CHIP RES. 150-OHM TAPED	S	AA	AA
	R 0208	VRD-RA2BE223J	RES 22KOHM 5% 1/8W	S	AA	AA
	R 0209	VRS-CY1JF682J	S. CHIP RES. 6.8 K OHM TAPED	S	AA	AA
	R 0210	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S	AA	AA
	R 0211	VRS-CY1JF682J	S. CHIP RES. 6.8 K OHM TAPED	S	AA	AA
	R 0212	VRS-CY1JF223J	S.CHOP REG 22K-OHM T	S	AA	AA
	R 0213	VRD-RA2HD183J	RES 18KOHM 5% 1/2W	S	AA	AA
	R 0214	VRD-RA2HD183J	RES 18KOHM 5% 1/2W	S	AA	AA
	R 0215	VRD-RA2HD822J	RES 8,2KOHM 5% 1/2W	S	AA	AA
	R 0221	VRS-CY1JF684J	S. CHIP RES. 680K-OHM TAPED	S	AA	AA
	R 0222	VRS-CY1JF224J	S. CHIP RES. 220K-OHM TAPED	S	AA	AA

	REF No.	PARTS	DESCRIPTION	*	SN CODE	EX CODE
	R 0223	VRD-RA2HD100J	RES 10 OHM 5% 1/2W	S	AA	AA
	R 0230	VRS-CY1JF223J	S.CHOP REG 22K-OHM T	S	AA	AA
	R 0231	VRS-CY1JF271J	S.CHIP RESIS. 270OHM TAPED	S	AA	AA
	R 0301	VRD-RA2BE101J	RES 100 OHM 5% 1/8W	S	AA	AA
	R 0302	VRD-RA2BE101J	RES 100 OHM 5% 1/8W	S	AA	AA
	R 0303	VRD-RA2BE101J	RES 100 OHM 5% 1/8W	S	AA	AA
	R 0304	VRD-RA2BE101J	RES 100 OHM 5% 1/8W	S	AA	AA
	R 0305	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S	AA	AA
	R 0306	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S	AA	AA
	R 0307	VRS-CY1JF472J	S. RES. 4.7K OHM TAPED	S	AA	AA
	R 0308	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S	AA	AA
	R 0309	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S	AA	AA
	R 0310	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S	AA	AA
	R 0311	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S	AA	AA
	R 0312	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S	AA	AA
	R 0313	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S	AA	AA
	R 0314	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S	AA	AA
	R 0316	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S	AA	AA
	R 0318	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S	AA	AA
	R 0319	VRS-CY1JF271J	S.CHIP RESIS. 270OHM TAPED	S	AA	AA
	R 0320	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S	AA	AA
	R 0321	VRS-CY1JF271J	S.CHIP RESIS. 270OHM TAPED	S	AA	AA
	R 0322	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S	AA	AA
	R 0323	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S	AA	AA
	R 0324	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S	AA	AA
	R 0325	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S	AA	AA
	R 0326	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S	AA	AA
	R 0327	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S	AA	AA
	R 0330	VRS-CY1JF100J	S CHIP RESISTOR 10 OHM	S	AA	AA
	R 0331	VRS-CY1JF272J	S. CHIP RES. 2.7K-OHM TAPED	S	AA	AA
	R 0332	VRS-CY1JF272J	S. CHIP RES. 2.7K-OHM TAPED	S	AA	AA
	R 0333	VRS-CY1JF102J	S.CHIP RES TAPE 1K OHM	S	AA	AA
	R 0334	VRS-CY1JF102J	S.CHIP RES TAPE 1K OHM	S	AA	AA
	R 0335	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S	AA	AA
	R 0336	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S	AA	AA
	R 0337	VRD-RA2BE100J	RES 10 OHM 5% 1/8W	S	AA	AA
	R 0338	VRS-CY1JF221J	S. CHIP RES. 220-OHM TAPED	S	AA	AA
	R 0339	VRS-CY1JF221J	S. CHIP RES. 220-OHM TAPED	S	AA	AA
	R 0341	VRS-CY1JF271J	S.CHIP RESIS. 270OHM TAPED	S	AA	AA
	R 0343	VRS-CY1JF271J	S.CHIP RESIS. 270OHM TAPED	S	AA	AA
	R 0350	VRS-CY1JF222J	S. CHIP RES. 2.2K-OHM TAPED	S	AA	AA
	R 0351	VRS-CY1JF273J	S. CHIP RES. 27-OHM TAPED	S	AA	AA
	R 0352	VRS-CY1JF123J	S CHIP RES. 12K-OHM TAPED	S	AA	AA
	R 0353	VRS-CY1JF151J	S CHIP RES. 150-OHM TAPED	S	AA	AA
	R 0355	VRD-RA2BE273J	RES 27KOHM 5% 1/8W	S	AA	AA
	R 0356	VRS-CY1JF103J	S.C. RESISTOR 10K OHM	S	AA	AA
	R 0357	VRS-CY1JF151J	S CHIP RES. 150-OHM TAPED	S	AA	AA
	R 0358	VRD-RA2BE104J	RES 100KOHM 5% 1/8W	S	AA	AA
	R 0359	VRD-RA2BE104J	RES 100KOHM 5% 1/8W	S	AA	AA
	R 0360	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S	AA	AA
	R 0362	VRS-CY1JF223J	S.CHOP REG 22K-OHM T	S	AA	AA
	R 0374	VRS-CY1JF153J	S CHIP RES. 15K-OHM TAPED	S	AA	AA
	R 0375	VRS-CY1JF153J	S CHIP RES. 15K-OHM TAPED	S	AA	AA
	R 0380	VRS-CY1JF183J	S. CHIP RES. 18K-OHM TAPED	S	AA	AA
	R 0382	VRS-CY1JF183J	S. CHIP RES. 18K-OHM TAPED	S	AA	AA
	R 0384	VRS-CY1JF223J	S.CHOP REG 22K-OHM T	S	AA	AA
	R 0385	VRS-CY1JF105J	S.CHIP TAPE RES 1M OHM	S	AA	AA
	R 0387	VRD-RA2BE101J	RES 100 OHM 5% 1/8W	S	AA	AA
	R 0406	VRS-TQ2BD750J	OX RE 75 OHM 5% 1/8W SMD	S	AA	AA
	R 0407	VRS-CY1JF750J	S CHIP RESISTOR 75 OHM	S	AA	AA
	R 0408	VRS-CY1JF682J	S. CHIP RES. 6.8 K OHM TAPED	S	AA	AA
	R 0409	VRS-CY1JF273J	S. CHIP RES. 27-OHM TAPED	S	AA	AA
	R 0410	VRS-CY1JF682J	S. CHIP RES. 6.8 K OHM TAPED	S	AA	AA
	R 0411	VRS-CY1JF273J	S. CHIP RES. 27-OHM TAPED	S	AA	AA
	R 0413	VRD-RA2BE680J	RES 68 OHM 5% 1/8W	S	AA	AA
	R 0414	VRD-RA2BE102J	RES 1KOHM 5% 1/8W	S	AA	AA
	R 0415	VRD-RA2BE750J	RES 75 OHM 5% 1/8W	S	AA	AA
	R 0416	VRD-RA2BE750J	RES 75 OHM 5% 1/8W	S	AA	AA
	R 0417	VRD-RA2BE750J	RES 75 OHM 5% 1/8W	S	AA	AA
	R 0418	VRS-CY1JF750J	S CHIP RESISTOR 75 OHM	S	AA	AA
	R 0419	VRS-CY1JF750J	S CHIP RESISTOR 75 OHM	S	AA	AA
	R 0420	VRS-CY1JF750J	S CHIP RESISTOR 75 OHM	S	AA	AA

REF No.	PARTS	DESCRIPTION	*	SN CODE	EX CODE
R 0421	VRS-CY1JF820J	RES 0603 82 OHM 5% 1/10W SMD	S	AA	AA
R 0422	VRS-CY1JF221J	S. CHIP RES. 220-OHM TAPED	S	AA	AA
R 0426	VRS-TQ2BD750J	OX RE 75 OHM 5% 1/8W SMD	S	AA	AA
R 0427	VRS-CY1JF682J	S. CHIP RES. 6.8 K OHM TAPED	S	AA	AA
R 0428	VRS-CY1JF273J	S. CHIP RES. 27-OHM TAPED	S	AA	AA
R 0437	VRS-CY1JF221J	S. CHIP RES. 220-OHM TAPED	S	AA	AA
R 0438	VRS-CY1JF471J	S. CHIP RES. 470-OHM TAPED	S	AA	AA
R 0439	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S	AA	AA
R 0440	VRS-CY1JF102J	S.CHIP RES TAPE 1K OHM	S	AA	AA
R 0441	RR-XZ0112BMZZ	FUS RES 10R TAP 5% 1/3W	S	AA	AB
R 0451	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 0452	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 0453	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 0501	VRS-VV3DB151J	MET OX RES 150 OHM 5% 2W	S	AA	AA
R 0502	VRS-CY1JF472F	S.CHIP RESISTOR 4.7K OHM 1%	S	AA	AA
R 0503	VRD-RA2BE102F	RES 1KOHM 1% 1/8W	S	AA	AA
R 0504	VRS-CY1JF102J	S.CHIP RES TAPE 1K OHM	S	AA	AA
R 0505	VRD-RA2BE221J	RES 220 OHM 5% 1/8W	S	AA	AA
R 0506	VRS-CY1JF102J	S.CHIP RES TAPE 1K OHM	S	AA	AA
R 0509	VRD-RA2BE393J	RES 39KOHM 5% 1/8W	S	AA	AA
R 0510	VRS-CY1JF822J	S. CHIP RES. 8.2K-OHM TAPED	S	AA	AA
R 0511	VRS-TQ2BD151J	OX RE 150 OHM 5% 1/8W SMD	S	AA	AA
R 0512	VRS-CY1JF472F	S.CHIP RESISTOR 4.7K OHM 1%	S	AA	AA
R 0513	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S	AA	AA
R 0514	VRS-CY1JF561J	S. CHIP RES 560-OHM TAPED	S	AA	AA
R 0515	VRS-CY1JF122J	S. RESISTOR 1.2K OHM	S	AA	AA
R 0516	VRS-CY1JF102F	CHIP RESISTOR 1% 1K	S	AA	AA
R 0518	VRN-VV3DB1R5J	MET FILM R 1,5 OHM 5% 2W	S	AA	AA
R 0526	VRS-CY1JF123J	S CHIP RES. 12K-OHM TAPED	S	AA	AA
R 0530	RR-XZ0208BMZZ	FUS RES 4R7 TAP 5% 1/2W	S	AA	AA
R 0531	VRS-CY1JF824J	RES 0603 820KOHM 5% 1/10W SMD	S	AA	AA
R 0534	VRS-CY1JF273J	S. CHIP RES. 27-OHM TAPED	S	AA	AA
R 0535	VRS-CY1JF682J	S. CHIP RES. 6.8 K OHM TAPED	S	AA	AA
R 0536	VRS-CY1JF472J	S. RES. 4.7K OHM TAPED	S	AA	AA
R 0537	VRS-CY1JF472J	S. RES. 4.7K OHM TAPED	S	AA	AA
R 0544	VRS-CY1JF102J	S.CHIP RES TAPE 1K OHM	S	AA	AA
R 0545	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S	AA	AA
R 0548	VRS-CY1JF682J	S. CHIP RES. 6.8 K OHM TAPED	S	AA	AA
R 0549	VRS-CY1JF273J	S. CHIP RES. 27-OHM TAPED	S	AA	AA
R 0553	RR-XZ0101BMZZ	FUS RES 1R2 TAP 5% 1/3W	S	AA	AB
R 0554	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S	AA	AA
R 0555	RR-XZ0208BMZZ	FUS RES 4R7 TAP 5% 1/2W	S	AA	AA
R 0601	VRS-VV3DB560J	MET OX RES 56 OHM 5% 2W	S	AA	AA
R 0603	VRN-KT3LB1R2J	RES MF 1,2 OHM 3W RNS3FB NOBLE	S	AA	AE
R 0604	VRS-CY1JF181J	S CHIP RES. 180-OHM TAPED	S	AA	AA
R 0605	VRS-CY1JF561J	S. CHIP RES 560-OHM TAPED	S	AA	AA
R 0607	VRS-CY1JF222J	S. CHIP RES. 2.2K-OHM TAPED	S	AA	AA
R 0608	VRS-TV1JD222J	2125 2,2KOHM 5% 1/10W SMD	S	AA	AA
R 0609	VRN-LU3DB1R0J	SET MET FILM 1 OHM 5% 2W LW	S	AA	AB
R 0610	VRS-CY1JF680J	S. RES. 68 OHM TAPED	S	AA	AA
R 0611	VRD-RA2HD220J	RES 22 OHM 5% 1/2W	S	AA	AA
R 0612	VRD-RA2HD222J	RES 2,2KOHM 5% 1/2W	S	AA	AA
R 0614	VRD-RA2HD103J	RES 10KOHM 5% 1/2W	S	AA	AA
R 0616	VRS-CY1JF100J	S CHIP RESISTOR 10 OHM	S	AA	AA
R 0617	RR-XZ0204BMZZ	FUS RES 2R2 TAP 5% 1/2W	S	AA	AB
R 0620	VRS-TV1JD472J	2125 4.7KOHM 5% 1/10W SMD	S	AA	AA
R 0621	VRS-CY1JF561J	S. CHIP RES 560-OHM TAPED	S	AA	AA
R 0622	VRS-CY1JF152J	S. CHIP RES. 1.5K-OHM	S	AA	AA
R 0623	VRS-CY1JF222J	S. CHIP RES. 2.2K-OHM TAPED	S	AA	AA
R 0626	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S	AA	AA
R 0627	VRD-RA2HD823J	RES 82KOHM 5% 1/2W	S	AA	AA
R 0629	VRS-CY1JF474J	S. CHIP RES. 4.7K-OHM	S	AA	AA
R 0630	VRS-CY1JF622J	RES 0603 6,2KOHM 5% 1/10W SMD	S	AA	AA
R 0631	VRS-CY1JF334J	S. CHIP RES. 330K-OHM TAPED	S	AA	AA
R 0632	VRS-CY1JF391J	SURFACE MOUNT CHIP RESISTOR 390 OHM	S	AA	AA
R 0633	VRS-CY1JF102J	S.CHIP RES TAPE 1K OHM	S	AA	AA
R 0634	VRS-CY1JF273J	S. CHIP RES. 27-OHM TAPED	S	AA	AA
R 0635	VRS-CY1JF105J	S.CHIP TAPE RES 1M OHM	S	AA	AA
R 0637	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S	AA	AA
R 0638	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S	AA	AA
R 0639	VRS-CY1JF334J	S. CHIP RES. 330K-OHM TAPED	S	AA	AA
R 0640	VRD-RA2BE103J	RES 10KOHM 5% 1/8W	S	AA	AA

REF No.	PARTS	DESCRIPTION	*	SN CODE	EX CODE
R 0641	VRS-CY1JF272J	S. CHIP RES. 2.7K-OHM TAPED	S	AA	AA
R 0643	VRS-CY1JF824J	RES 0603 820KOHM 5% 1/10W SMD	S	AA	AA
R 0644	VRS-CY1JF182J	S CHIP RES 1.8K-OHM TAPED	S	AA	AA
R 0645	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 0650	RR-XZ0200BMZZ	FUS RES 1R0 TAP 5% 1/2W	S	AA	AB
R 0651	VRD-RA2HD122J	RES 1.2KOHM 5% 1/2W	S	AA	AA
R 0654	VRD-RA2BE101J	RES 100 OHM 5% 1/8W	S	AA	AA
R 0655	VRS-CY1JF272J	S. CHIP RES. 2.7K-OHM TAPED	S	AA	AA
R 0656	VRS-CY1JF222J	S. CHIP RES. 2.2K-OHM TAPED	S	AA	AA
R 0657	RR-XZ0212BMZZ	FUS RES 10R TAP 5% 1/2W	S	AA	AB
R 0658	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 0660	VRD-RA2HD123J	RES 12KOHM 5% 1/2W	S	AA	AA
R 0663	VRN-VV3DBR56J	MET FILM R .56 OHM 5% 2W	S	AA	AB
R 0664	VRS-CY1JF102J	S.CHIP RES TAPE 1K OHM	S	AA	AA
R 0665	VRS-CY1JF103J	S.C. RESISTOR 10K OHM	S	AA	AA
R 0666	VRD-RA2EE150J	RES 15 OHM 5% 1/4W	S	AA	AA
R 0667	VRD-RA2EE150J	RES 15 OHM 5% 1/4W	S	AA	AA
R 0668	RR-XZ0231BMZZ	FUS RES 390R TAP 5% 1/2W	S	AA	AB
R 0669	VRS-CY1JF100J	S CHIP RESISTOR 10 OHM	S	AA	AA
R 0670	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 0700	VRS-CY1JF472J	S. RES. 4.7K OHM TAPED	S	AA	AA
R 0701	VRS-CY1JF223J	S.CHOP REG 22K-OHM T	S	AA	AA
R 0703	VRS-CY1JF272J	S. CHIP RES. 2.7K-OHM TAPED	S	AA	AA
R 0705	VRS-CY1JF822J	S. CHIP RES. 8.2K-OHM TAPED	S	AA	AA
R 0706	VRS-TQ2BD394J	OX RE 390KOHM 5% 1/8W SMD	S	AA	AA
R 0707	VRS-CY1JF105J	S.CHIP TAPE RES 1M OHM	S	AA	AA
R 0708	VRS-TQ2BD394J	OX RE 390KOHM 5% 1/8W SMD	S	AA	AA
R 0709	VRS-TQ2BD334F	OX RE 330KOHM 1% 1/8W SMD	S	AA	AA
R 0710	VRS-TQ2BD334F	OX RE 330KOHM 1% 1/8W SMD	S	AA	AA
R 0711	VRD-RA2BE100J	RES 10 OHM 5% 1/8W	S	AA	AA
R 0712	VRS-TQ2BD394J	OX RE 390KOHM 5% 1/8W SMD	S	AA	AA
R 0713	VRS-CY1JF103J	S.C. RESISTOR 10K OHM	S	AA	AA
R 0714	VRN-VV3LBR56J	MET FILM R 0,56 OHM 5% 3W	S	AA	AB
R 0715	VRS-CY1JF183F	RES 0603 18KOHM 1% 1/10W SMD	S	AA	AA
R 0716	VRS-TQ2BD394J	OX RE 390KOHM 5% 1/8W SMD	S	AA	AA
R 0717	VRD-RA2BE101J	RES 100 OHM 5% 1/8W	S	AA	AA
R 0718	RR-XZ0212BMZZ	FUS RES 10R TAP 5% 1/2W	S	AA	AB
R 0719	VRN-VY2HD105J	RESISTOR AT 1 M 0,5W 5% VR37 PHILIPS	S	AA	AB
R 0721	VRD-RA2HD121J	RES 120 OHM 5% 1/2W	S	AA	AA
R 0722	VRD-RA2BE103J	RES 10KOHM 5% 1/8W	S	AA	AA
R 0723	VRD-RA2BE332J	RES 3,3KOHM 5% 1/8W	S	AA	AA
R 0725	VRD-RA2BE332J	RES 3,3KOHM 5% 1/8W	S	AA	AA
R 0726	VRS-CY1JF562F	RES 0603 5,6KOHM 1% 1/10W SMD	S	AA	AA
R 0727	VRS-CY1JF223J	S.CHOP REG 22K-OHM T	S	AA	AA
R 0728	VRD-RA2HD121J	RES 120 OHM 5% 1/2W	S	AA	AA
R 0729	VRS-CY1JF223J	S.CHOP REG 22K-OHM T	S	AA	AA
R 0730	VRW-KQ41C4R7K	WOUND RES 4.7 OHM 10% 15W	S	AC	AE
R 0731	VRS-CY1JF472F	S.CHIP RESISTOR 4.7K OHM 1%	S	AA	AA
R 0732	VRS-CY1JF152J	S. CHIP RES. 1.5K-OHM	S	AA	AA
R 0733	VRD-RA2BE562F	RES 5,6KOHM 1% 1/8W	S	AA	AA
R 0735	VRS-CY1JF562F	RES 0603 5,6KOHM 1% 1/10W SMD	S	AA	AA
R 0736	VRS-CY1JF103J	S.C. RESISTOR 10K OHM	S	AA	AA
R 0737	VRS-CY1JF102J	S.CHIP RES TAPE 1K OHM	S	AA	AA
R 0738	VRD-RA2HD151J	RES 150 OHM 5% 1/2W	S	AA	AA
R 0739	VRS-CY1JF102J	S.CHIP RES TAPE 1K OHM	S	AA	AA
R 0740	VRS-TQ2BD561J	OX RE 560 OHM 5% 1/8W SMD	S	AA	AA
R 0741	VRS-CY1JF334J	S. CHIP RES. 330K-OHM TAPED	S	AA	AA
R 0742	VRS-TQ2BD124F	RE OX 120KOHM 1% 1/8W SMD	S	AA	AA
R 0743	VRS-TQ2BD124F	RE OX 120KOHM 1% 1/8W SMD	S	AA	AA
R 0744	VRS-CY1JF472F	S.CHIP RESISTOR 4.7K OHM 1%	S	AA	AA
R 0745	VRS-CY1JF333J	S. CHIP RES. 33K-OHM TAPED	S	AA	AA
⚠ R 0746	RR-HZA001WJZZ	R HIGH VOL 8M2 0,5W BC VR37 232224223825	S	AA	AB
⚠ R 0747	RR-HZA001WJZZ	R HIGH VOL 8M2 0,5W BC VR37 232224223825	S	AA	AB
R 0748	VRS-CY1JF224J	S. CHIP RES. 220K-OHM TAPED	S	AA	AA
R 0749	VRN-VY2HD105J	RESISTOR AT 1 M 0,5W 5% VR37 PHILIPS	S	AA	AB
R 0750	VRS-CY1JF223J	S.CHOP REG 22K-OHM T	S	AA	AA
R 0751	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S	AA	AA
R 0752	VRS-CY1JF103J	S.C. RESISTOR 10K OHM	S	AA	AA
R 0753	VRS-CY1JF222J	S. CHIP RES. 2.2K-OHM TAPED	S	AA	AA
R 0754	VRS-CY1JF103J	S.C. RESISTOR 10K OHM	S	AA	AA
R 0755	RR-XZ0224BMZZ	FUS RES 100R TAP 5% 1/2W	S	AA	AB
R 0756	VRD-RA2BE182J	RES 1,8KOHM 5% 1/8W	S	AA	AA

REF No.	PARTS	DESCRIPTION	*	SN CODE	EX CODE
R 0758	RR-XZ0123BMZZ	FUS RES 82R TAP 5% 1/3W	S	AA	AB
R 0759	VRS-VV3DB100J	MET OX RES 10 OHM 5% 2W	S	AA	AB
R 0760	VRS-CY1JF392J	S. CHIP RES. 3.9K-OHM TAPED	S	AA	AA
R 0761	VRS-TQ2BDR68J	OX RE 0,68 OHM 5% 1/8W SMD LRC01	S	AA	AA
R 0764	VRS-CY1JF471J	S. CHIP RES. 470-OHM TAPED	S	AA	AA
R 0765	VRS-CY1JF102J	S.CHIP RES TAPE 1K OHM	S	AA	AA
R 0766	VRS-CY1JF473J	S. CHIP RES 47K-OHM TAPED	S	AA	AA
R 0767	VRS-CY1JF472J	S. RES. 4.7K OHM TAPED	S	AA	AA
R 0768	VRS-CY1JF102J	S.CHIP RES TAPE 1K OHM	S	AA	AA
R 0772	VRS-VV3DB8R2J	MET OX RES 8,2 OHM 5% 2W	S	AA	AA
R 0773	VRS-CY1JF102J	S.CHIP RES TAPE 1K OHM	S	AA	AA
R 0775	VRS-CY1JF153J	S CHIP RES. 15K-OHM TAPED	S	AA	AA
R 0776	VRD-RA2BE122J	RES 1,2KOHM 5% 1/8W	S	AA	AA
R 0777	VRS-TQ2BDR68J	OX RE 0,68 OHM 5% 1/8W SMD LRC01	S	AA	AA
R 0778	VRD-RA2HD101J	RES 100 OHM 5% 1/2W	S	AA	AA
R 0779	VRD-RA2HD101J	RES 100 OHM 5% 1/2W	S	AA	AA
R 0780	VRD-RA2HD220J	RES 22 OHM 5% 1/2W	S	AA	AA
R 0781	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S	AA	AA
R 0782	VRS-CY1JF473J	S. CHIP RES 47K-OHM TAPED	S	AA	AA
R 0783	VRS-CY1JF224J	S. CHIP RES. 220K-OHM TAPED	S	AA	AA
R 0784	VRS-CY1JF183J	S. CHIP RES. 18K-OHM TAPED	S	AA	AA
R 0785	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S	AA	AA
R 0786	VRS-CY1JF182J	S CHIP RES 1.8K-OHM TAPED	S	AA	AA
R 0787	RR-XZ0214BMZZ	FUS RES 15R TAP 5% 1/2W	S	AA	AB
R 0788	VRS-CY1JF223J	S.CHOP REG 22K-OHM T	S	AA	AA
R 0789	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S	AA	AA
R 0790	VRD-RA2HD271J	RES 270 OHM 5% 1/2W	S	AA	AA
R 0791	VRS-CY1JF391J	SURFACE MOUNT CHIP RESISTOR 390 OHM	S	AA	AA
R 0792	VRS-CY1JF223J	S.CHOP REG 22K-OHM T	S	AA	AA
R 0793	VRS-CY1JF223J	S.CHOP REG 22K-OHM T	S	AA	AA
R 0794	VRS-CY1JF471J	S. CHIP RES. 470-OHM TAPED	S	AA	AA
R 0795	VRD-RA2BE560J	RES 56 OHM 5% 1/8W	S	AA	AA
R 0796	RR-XZ0200BMZZ	FUS RES 1R0 TAP 5% 1/2W	S	AA	AB
R 0797	RR-XZ0202BMZZ	FUS RES 1R5 TAP 5% 1/2W	S	AA	AB
R 0798	RR-XZ0218BMZZ	FUS RES 33R TAP 5% 1/2W	S	AA	AB
R 0799	RR-XZ0200BMZZ	FUS RES 1R0 TAP 5% 1/2W	S	AA	AB
R 0901	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S	AA	AA
R 0902	VRS-CY1JF333J	S. CHIP RES. 33K-OHM TAPED	S	AA	AA
R 0903	VRS-CY1JF102J	S.CHIP RES TAPE 1K OHM	S	AA	AA
R 0904	VRS-CY1JF273J	S. CHIP RES. 27-OHM TAPED	S	AA	AA
R 0905	VRS-CY1JF223J	S.CHOP REG 22K-OHM T	S	AA	AA
R 0906	VRS-CY1JF225J	S. CHIP RES. 2.2M OHM TAPED	S	AA	AA
R 0907	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S	AA	AA
R 1009	VRD-RA2BE273J	RES 27KOHM 5% 1/8W	S	AA	AA
R 1010	VRS-CY1JF332J	S. CHIP RES. 3.3K-OHM TAPED	S	AA	AA
R 1017	VRS-CY1JF153J	S CHIP RES. 15K-OHM TAPED	S	AA	AA
R 1019	VRS-CY1JF273J	S. CHIP RES. 27-OHM TAPED	S	AA	AA
R 1024	VRD-RA2BE102J	RES 1KOHM 5% 1/8W	S	AA	AA
R 1025	VRS-CY1JF102F	CHIP RESISTOR 1% 1K	S	AA	AA
R 1026	VRS-CY1JF561F	RES 0603 560 OHM 1% 1/10W SMD	S	AA	AA
R 1036	VRD-RA2BE472J	RES 4,7KOHM 5% 1/8W	S	AA	AA
R 1037	VRS-CY1JF102J	S.CHIP RES TAPE 1K OHM	S	AA	AA
R 1039	VRS-CY1JF332J	S. CHIP RES. 3.3K-OHM TAPED	S	AA	AA
R 1042	VRS-CY1JF102F	CHIP RESISTOR 1% 1K	S	AA	AA
R 1049	VRS-CY1JF472J	S. RES. 4.7K OHM TAPED	S	AA	AA
R 1050	VRS-CY1JF153J	S CHIP RES. 15K-OHM TAPED	S	AA	AA
R 1051	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 1053	VRS-CY1JF222F	RES 0603 2,2KOHM 1% 1/10W SMD (SMM)	S	AA	AA
R 1099	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S	AA	AA
		MISCELLANEOUS PARTS			
(AA)	QCNCM0672FCZZ	CONN B2P3-VH JST	S	AA	AB
(AV)	QSOCZ2112BMZZ	TWIN SCART CHASSIS GA-10	S	AD	AL
(CR)	QPLGN0241CEZZ	PLUG	S	AA	AA
(F)	QPLGN1505BMZZ	HEADER 4+1 JST B05B-DVS-L	S	AA	AC
(G)	QPLGN0260CEZZ	CONNECTOR 2 PIN TV-50P-02-V2 A TAIKO	S	AA	AA
(H)	QPLGN0541CEZZ	PLUG	S	AA	AA
(HD)	QPLGN0341CEZZ	PLUG	S	AA	AA
(L2)	QTIPM0017CEFM	TIP	S	AA	AA
(MO)	QPLGN0441CEZZ	PLUG 4PIN	S	AA	AA
(RGB)	QSOCZ2107BMZZ	SOCKET	S	AF	AE
(S)	QPLGN0441CEZZ	PLUG 4PIN	S	AA	AA

REF No.	PARTS	DESCRIPTION	*	SN CODE	EX CODE
(SS)	QPLGN0341CEZZ	PLUG	S	AA	AA
(SWRC)	QPLGN0441CEZZ	PLUG 4PIN	S	AA	AA
(VIA)	QPLGN0241CEZZ	PLUG	S	AA	AA
(VIB)	QPLGN0441CEZZ	PLUG 4PIN	S	AA	AA
(YA)	QSOCZ2561CEZZ	CONECTOR 25P JDV R25LB-10A	S	AB	AF
(YB)	QSOCZ2561CEZZ	CONECTOR 25P JDV R25LB-10A	S	AB	AF
⚠ F 0702	QFS-J4021CEZZ	FUS. 4,0A/125V LITTELFUSE	S	AC	AE
⚠ F 0704	QFS-J4021CEZZ	FUS. 4,0A/125V LITTELFUSE	S	AC	AE
FB 0301	RBLN-0091GEZZ	FERRITE BEAD	S	AA	AA
FB 0302	RBLN-0091GEZZ	FERRITE BEAD	S	AA	AA
FB 0303	RBLN-0091GEZZ	FERRITE BEAD	S	AA	AA
FB 0501	RBLN-0091GEZZ	FERRITE BEAD	S	AA	AA
FB 0601	RBLN-0091GEZZ	FERRITE BEAD	S	AA	AA
FB 0603	VRN-VV3ABR22J	MET FILM R .22 OHM 5% 1W	S	AB	AA
FB 0701	RBLN-0091GEZZ	FERRITE BEAD	S	AA	AA
FB 0703	RBLN-0091GEZZ	FERRITE BEAD	S	AA	AA
J 0002	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
J 0006	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
J 0007	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
J 0008	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
J 0009	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
J 0012	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
J 0015	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
J 0027	RBLN-0091GEZZ	FERRITE BEAD	S	AA	AA
J 0036	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
J 0073	VRD-RA2EE222J	RES 2,2KOHM 5% 1/4W	S	AA	AA
J 0074	VRD-RA2EE222J	RES 2,2KOHM 5% 1/4W	S	AA	AA
J 0103	VRD-RA2HD122J	RES 1.2KOHM 5% 1/2W	S	AA	AA
J 0111	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
J 0128	VRD-RA2HD122J	RES 1.2KOHM 5% 1/2W	S	AA	AA
J 0139	VRD-RA2EE222J	RES 2,2KOHM 5% 1/4W	S	AA	AA
J 0140	VRD-RA2EE222J	RES 2,2KOHM 5% 1/4W	S	AA	AA
J 0141	VRD-RA2EE222J	RES 2,2KOHM 5% 1/4W	S	AA	AA
J 0142	VRD-RA2EE222J	RES 2,2KOHM 5% 1/4W	S	AA	AA
J 0146	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
J 0150	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
J 0161	VRD-RA2EE222J	RES 2,2KOHM 5% 1/4W	S	AA	AA
J 0162	VRD-RA2EE222J	RES 2,2KOHM 5% 1/4W	S	AA	AA
J 0165	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
J 0192	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
JF 0004	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
JF 0005	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
JF 0006	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
JF 0008	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
JF 0011	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
JF 0054	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
JF 0055	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
JF 0056	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
JF 0058	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
JF 0063	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
JF 1001	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
JF 1009	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
RA 0609	VT-SI04009017	SILICON TUBE	S	AA	AA
RB 0609	VT-SI04009017	SILICON TUBE	S	AA	AA
PWB-B		**CRT UNIT**			
		INTEGRATED CIRCUITS			
IC 0850	VHITDA6111Q-1	IC TDA6111Q PHILIPS	S	AH	AQ
IC 0851	VHITDA6111Q-1	IC TDA6111Q PHILIPS	S	AH	AQ
IC 0852	VHITDA6111Q-1	IC TDA6111Q PHILIPS	S	AH	AQ
		TRANSISTORS			
Q 0851	VS2SA1246//1E	TRT A1246 SANYO	S	AA	AB
Q 0854	RH-TX0142BMZZ	TRT TBC 547-B TOSHIBA	S	AA	AB
Q 5405	RH-TX0111BMZZ	TRT PH-2369 PHILIPS	S	AA	AB
Q 5406	RH-TX0135BMZZ	TRT BF324 PH	S	AB	AC
Q 5407	VS2SA1837//-1	TRT A1837 TOSHIBA	S	AB	AE
Q 5408	VS2SC4793//-1	TRT C4793 TOSHIBA	S	AB	AE
Q 5411	RH-TX0142BMZZ	TRT TBC 547-B TOSHIBA	S	AA	AB
Q 5412	RH-TX0143BMZZ	TRT TBC 557-B TOSHIBA	S	AA	AA
Q 5414	RH-TX0108BMZZ	TRT BC635	S	AA	AC

	REF No.	PARTS	DESCRIPTION	*	SN CODE	EX CODE
			DIODES			
	D 0851	RH-DX0045BMZZ	DIODE 1N4148	S	AA	AA
	D 0852	RH-DX0045BMZZ	DIODE 1N4148	S	AA	AA
	D 0861	RH-DX0570BMZZ	DIODE 1N4004 ACPA	S	AA	AA
	D 0862	RH-DX0570BMZZ	DIODE 1N4004 ACPA	S	AA	AA
	D 0863	RH-DX0570BMZZ	DIODE 1N4004 ACPA	S	AA	AA
	D 0864	RH-DX0045BMZZ	DIODE 1N4148	S	AA	AA
	D 0865	RH-EX0408BMZZ	ZENER DIODE BZX79C5V1	S	AB	AB
	D 0866	RH-EX0408BMZZ	ZENER DIODE BZX79C5V1	S	AB	AB
	D 0867	RH-EX0408BMZZ	ZENER DIODE BZX79C5V1	S	AB	AB
	D 0868	RH-EX0408BMZZ	ZENER DIODE BZX79C5V1	S	AB	AB
	D 0869	RH-DX0045BMZZ	DIODE 1N4148	S	AA	AA
	D 5408	RH-DX0045BMZZ	DIODE 1N4148	S	AA	AA
	D 5409	RH-DX0045BMZZ	DIODE 1N4148	S	AA	AA
	D 5411	RH-EX0418BMZZ	ZENER DIODE BZX79C13V	S	AB	AB
			COILS			
	L 0864	RCILP0179CEZZ	COIL LHL08TB470K TAIYO YUDEN	S	AA	AC
			CAPACITORS			
	C 0850	VCEA0A1CW337M	ELEC C 330UF 20% 16V	S	AA	AA
	C 0851	VCEA0A1CW476M	ELEC C 47UF 20% 16V	S	AA	AA
	C 0852	VCFYFA1HA103J	POL FILM C 10NF 5% 50V	S	AA	AA
	C 0853	VCEA0A1CW108M	ELEC C 1000MF 16V 10X16MM	S	AA	AB
	C 0861	VCCCPA1HH5R0C	CERAM C 5PF % 50V	S	AA	AA
	C 0862	VCCCPA1HH100D	CERAM C 10PF 05% 50V	S	AA	AA
	C 0863	VCEA0A1CW106M	ELEC C 10UF 20% 16V	S	AA	AA
	C 0865	VCCCPA1HH7R0D	CERAM C 7PF % 50V	S	AA	AA
	C 0868	VCEAGH2EW107M	ELEC C 100MF 20% 250V	S	AC	AH
	C 0869	VCKYPB3DE472Z	C DE1110-1E472Z2K MURATA	S	AA	AC
	C 0871	VCFYFA1HA103J	POL FILM C 10NF 5% 50V	S	AA	AA
	C 0874	VCFYFA1HA103J	POL FILM C 10NF 5% 50V	S	AA	AA
	C 0877	VCFYFA1HA103J	POL FILM C 10NF 5% 50V	S	AA	AA
	C 0880	VCFYAA2EA333K	POL FILM C 33NF 10% 250V	S	AC	AE
	C 0881	VCCSPA1HL561J	CERAM C 560PF 5% 50V	S	AA	AA
	C 0882	VCFYAA2EA333K	POL FILM C 33NF 10% 250V	S	AC	AE
	C 0883	VCCSPA1HL561J	CERAM C 560PF 5% 50V	S	AA	AA
	C 0884	VCFYAA2EA333K	POL FILM C 33NF 10% 250V	S	AC	AE
	C 0885	VCCSPA1HL561J	CERAM C 560PF 5% 50V	S	AA	AA
	C 0887	VCEA0A1CW227M	E CAPACITOR 220UF 16V 6.3x11	S	AA	AB
	C 0890	RC-FZ9223BMNJ	POL FILM C 22NF 5% 63V	S	AA	AB
	C 0895	VCEA0A2EW476M	ELEC C 47UF 20% 250V	S	AA	AD
	C 5405	VCFYFA1HA224J	PP FILM C 220NF 5% 50V	S	AA	AA
	C 5407	VCFYFA1HA103J	POL FILM C 10NF 5% 50V	S	AA	AA
	C 5408	RC-FZ0156BMZZ	C B32529-B6473K 47nF 400V SIEMENS	S	AD	AE
	C 5409	VCQYTA1HM122J	F.CAPACITOR 0.0012 U-F	S	AA	AA
	C 5414	VCEAGA2CW226M	ELEC C 22UF 20% 160V	S	AA	AB
	C 5416	VCCCPA1HH100D	CERAM C 10PF 05% 50V	S	AA	AA
	C 5418	VCEA0A1CW476M	ELEC C 47UF 20% 16V	S	AA	AA
	C 5419	VCEA0A1HW106M	ELEC C 10UF 20% 50V	S	AA	AA
	C 5420	VCFYFA1HA474J	FILM CAPACITOR 474 MAT	S	AA	AB
	C 5421	VCFYFA1HA474J	FILM CAPACITOR 474 MAT	S	AA	AB
	C 5422	VCQYTA1HM473J	FILM POL C 47NF 5% 50V	S	AA	AA
	C 5424	RC-FZ6683BMNJ	PP FILM C 68NF 5% 250V	S	AA	AB
			RESISTORS			
	R 0853	VRD-RA2BE223J	RES 22KOHM 5% 1/8W	S	AA	AA
	R 0856	VRD-RA2EE680J	RES 68 OHM 5% 1/4W	S	AA	AA
	R 0859	VRD-RA2BE101J	RES 100 OHM 5% 1/8W	S	AA	AA
	R 0860	VRD-RA2BE221J	RES 220 OHM 5% 1/8W	S	AA	AA
	R 0861	VRD-RA2BE152J	RES 1,5KOHM 5% 1/8W	S	AA	AA
	R 0862	VRD-RA2BE102J	RES 1KOHM 5% 1/8W	S	AA	AA
	R 0863	VRD-RA2BE152J	RES 1,5KOHM 5% 1/8W	S	AA	AA
	R 0865	VRD-RA2BE332J	RES 3,3KOHM 5% 1/8W	S	AA	AA
	R 0866	VRD-RA2BE152J	RES 1,5KOHM 5% 1/8W	S	AA	AA
	R 0868	VRD-RA2BE152J	RES 1,5KOHM 5% 1/8W	S	AA	AA
	R 0872	VRD-RA2BE562J	RES 5,6KOHM 5% 1/8W	S	AA	AA
	R 0873	VRD-RA2BE221J	RES 220 OHM 5% 1/8W	S	AA	AA
	R 0875	VRD-RA2BE562J	RES 5,6KOHM 5% 1/8W	S	AA	AA
	R 0876	VRD-RA2BE562J	RES 5,6KOHM 5% 1/8W	S	AA	AA
	R 0880	VRS-VV3DB683J	MET OX RES 68KOHM 5% 2W	S	AA	AA
	R 0883	VRS-VV3DB683J	MET OX RES 68KOHM 5% 2W	S	AA	AA
	R 0884	VRS-VV3DB683J	MET OX RES 68KOHM 5% 2W	S	AA	AA
	R 0886	VRD-RA2BE221J	RES 220 OHM 5% 1/8W	S	AA	AA
	R 0887	VRD-RA2HD331J	RES 330 OHM 5% 1/2W	S	AA	AA
	R 0888	VRC-MA2HG681J	SOLID R 680 OHM 5% 1/2W	S	AA	AB
	R 0889	VRD-RA2HD331J	RES 330 OHM 5% 1/2W	S	AA	AA
	R 0891	VRC-MA2HG681J	SOLID R 680 OHM 5% 1/2W	S	AA	AB
	R 0892	VRD-RA2HD331J	RES 330 OHM 5% 1/2W	S	AA	AA
	R 0894	VRC-MA2HG681J	SOLID R 680 OHM 5% 1/2W	S	AA	AB
	R 0895	VRD-RA2BE392J	RES 3,9KOHM 5% 1/8W	S	AA	AA
	R 5415	VRD-RA2BE102J	RES 1KOHM 5% 1/8W	S	AA	AA
	R 5416	VRD-RA2BE124J	RES 120KOHM 5% 1/8W	S	AA	AA
	R 5418	VRD-RA2BE124J	RES 120KOHM 5% 1/8W	S	AA	AA
	R 5419	VRD-RA2BE102J	RES 1KOHM 5% 1/8W	S	AA	AA
	R 5420	VRD-RA2EE3R3J	RES 3,3 OHM 5% 1/4W	S	AA	AA
	R 5421	VRD-RA2EE3R3J	RES 3,3 OHM 5% 1/4W	S	AA	AA
	R 5424	VRS-VV3DB102J	MET OX RES 1KOHM 5% 2W	S	AA	AA
	R 5425	VRS-VV3LB332J	MET OX RES 3,3KOHM 5% 3W	S	AA	AA
	R 5427	VRD-RA2BE222J	RES 2,2KOHM 5% 1/8W	S	AA	AA
	R 5431	VRD-RA2BE122J	RES 1,2KOHM 5% 1/8W	S	AA	AA
	R 5432	VRD-RA2BE330J	RES 33 OHM 5% 1/8W	S	AA	AA
	R 5433	VRD-RA2BE101J	RES 100 OHM 5% 1/8W	S	AA	AA
	R 5434	VRD-RA2BE152J	RES 1,5KOHM 5% 1/8W	S	AA	AA
	R 5435	VRD-RA2BE221J	RES 220 OHM 5% 1/8W	S	AA	AA
	R 5436	VRD-RA2BE101J	RES 100 OHM 5% 1/8W	S	AA	AA
	R 5437	RR-XZ0200BMZZ	FUS RES 1R0 TAP 5% 1/2W	S	AA	AB
	R 5442	VRD-RA2BE100J	RES 10 OHM 5% 1/8W	S	AA	AA
	R 5443	VRD-RA2BE100J	RES 10 OHM 5% 1/8W	S	AA	AA
	R 5444	VRD-RA2BE100J	RES 10 OHM 5% 1/8W	S	AA	AA
	R 5445	VRD-RA2BE151J	RES 150 OHM 5% 1/8W	S	AA	AA
	R 5446	VRD-RA2BE100J	RES 10 OHM 5% 1/8W	S	AA	AA
	R 5447	VRD-RA2BE223J	RES 22KOHM 5% 1/8W	S	AA	AA
			MISCELLANEOUS PARTS			
	(H)0000	QPLGN0541CEZZ	PLUG	S	AA	AA
	(K)0000	QPLGN0841CEZZ	PLUG	S	AA	AB
	(L)0002	QTIPM0017CEFM	TIP	S	AA	AA
	(MO)	QPLGN0441CEZZ	PLUG 4PIN	S	AA	AA
	(SVM)	QPLGN0341CEZZ	PLUG	S	AA	AA
	FB 0850	RBLN-0091GEZZ	FERRITE BEAD	S	AA	AA
	FB 0851	RBLN-0091GEZZ	FERRITE BEAD	S	AA	AA
	FB 0852	RBLN-0091GEZZ	FERRITE BEAD	S	AA	AA
⚠	SC 0861	QSOCV0103BMZZ	SOCK HPS1521-014408 HOSHI	S	AD	AG
	PWB-C		**DIGITAL MODULE**			
			INTEGRATED CIRCUITS			
	IC 6001	RH-IX1861BMZZ	IC SDA6000 GEG MICRONAS	S	AS	BD
	IC 6002	RH-IX1880BMZZ	IC SDRAM HY57V641620HG HYNIX	S	AL	AX
*	IC 6003	CH-IX1863CJE0	CON FLASH MEM MBM29LV160BE70TN 28JW76E/ES	S	--	--
	IC 6006	RH-IX1805BMZZ	IC SDA9380 INFINEON	S	AN	AZ
	IC 6007	RH-IX1884BMZZ	IC VSP9407 MICRONAS	S	BA	BQ
	IC 6008	RH-IX1882BMZZ	IC TAR5S25 TOSHIBA	S	AA	AD
	IC 6009	RH-IX1882BMZZ	IC TAR5S25 TOSHIBA	S	AA	AD
	IC 6010	RH-IX1883BMZZ	IC M24128-WHN5 ST	S	AD	AN
	IC 6011	RH-IX1873BMZZ	IC RESET MC33164P-3RA ONSEMICONDUCTOR	S	AA	AE
			FOR 28JW76EC MODEL USE:			
*	IC 6003	CH-IX1863CJC2	CON FLASH MEM MBM29LV160BE70TN 28JW76EC	S	--	--
			TRANSISTORS			
	Q 6001	RH-TX0232BMZZ	TRT BC847B SMD PHILIPS	S	AA	AA
	Q 6002	RH-TX0232BMZZ	TRT BC847B SMD PHILIPS	S	AA	AA
	Q 6003	RH-TX0232BMZZ	TRT BC847B SMD PHILIPS	S	AA	AA
	Q 6004	RH-TX0232BMZZ	TRT BC847B SMD PHILIPS	S	AA	AA
	Q 6005	RH-TX0232BMZZ	TRT BC847B SMD PHILIPS	S	AA	AA
	Q 6006	RH-TX0232BMZZ	TRT BC847B SMD PHILIPS	S	AA	AA
	Q 6007	RH-TX0243BMZZ	TRT BC857B PHILIPS	S	AA	AA
	Q 6008	RH-TX0232BMZZ	TRT BC847B SMD PHILIPS	S	AA	AA
	Q 6009	RH-TX0217BMZZ	TRT BC337 PHILIPS	S	AA	AB
	Q 6010	RH-TX0232BMZZ	TRT BC847B SMD PHILIPS	S	AA	AA
			DIODES			

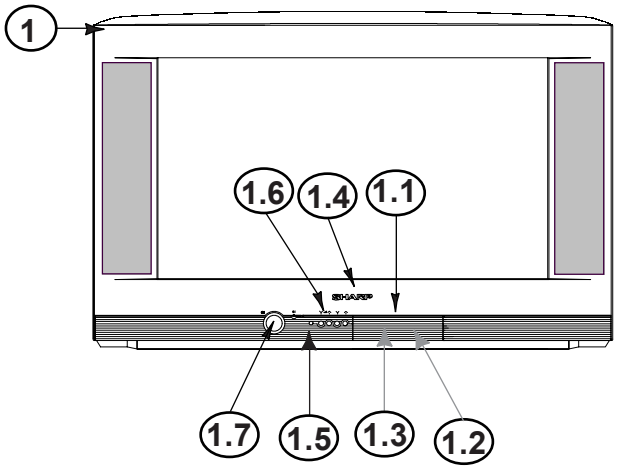
REF No.	PARTS	DESCRIPTION	*	SN CODE	EX CODE
D 6001	RH-DX0606BMZZ	DIODE BAS85 PHILIPS SMD	S	AA	AB
D 6003	RH-DX0606BMZZ	DIODE BAS85 PHILIPS SMD	S	AA	AB
D 6005	RH-EX0540BMZZ	ZENER DIODE TZMC3V3 TFK SMD	S	AA	AA
D 6010	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S	AA	AA
D 6011	RH-EX0550BMZZ	ZENER DIODE TZMC8V2 TFK SMD	S	AA	AA
D 6012	RH-EX0540BMZZ	ZENER DIODE TZMC3V3 TFK SMD	S	AA	AA
D 6013	RH-DX0606BMZZ	DIODE BAS85 PHILIPS SMD	S	AA	AB
D 6014	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S	AA	AA
D 6015	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S	AA	AA
D 6016	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S	AA	AA
		PACKAGED CIRCUITS			
X 6001	RCRSB0100BMZZ	CRYSTAL 6,00 MHZ	S	AD	AG
X 6002	RCRSB0244BMZZ	CRYSTAL 24.576MHz ACAL	S	AC	AG
X 6003	RCRSB0219BMZZ	CRYSTAL 20.25 HMZ	S	AG	AH
		COILS			
L 6001	VP-NM100KR42N	COIL 10UH SMD	S	AA	AB
L 6002	VP-NM3R3MR19N	COIL 3,3UH SMD	S	AA	AB
L 6003	VP-NM1R0MR10N	COIL 1UH SMD	S	AB	AB
L 6004	VP-NM1R0MR10N	COIL 1UH SMD	S	AB	AB
L 6005	VP-NM1R0MR10N	COIL 1UH SMD	S	AB	AB
L 6006	VP-NM1R0MR10N	COIL 1UH SMD	S	AB	AB
L 6007	VP-NM1R0MR10N	COIL 1UH SMD	S	AB	AB
L 6008	VP-NM1R0MR10N	COIL 1UH SMD	S	AB	AB
L 6009	VP-NM1R0MR10N	COIL 1UH SMD	S	AB	AB
L 6020	VP-NM1R0MR10N	COIL 1UH SMD	S	AB	AB
L 6021	VP-NM1R0MR10N	COIL 1UH SMD	S	AB	AB
L 6022	VP-NM1R0MR10N	COIL 1UH SMD	S	AB	AB
L 6023	VP-NM1R0MR10N	COIL 1UH SMD	S	AB	AB
L 6024	VRS-TQ2BD000J	3216 0 OHM 5% 1/8W SMD	S	AA	AA
		CAPACITORS			
C 6001	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6002	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6003	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6004	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6005	VCCCCY1HH330J	S. CHIP CAP 33PF/50V	S	AA	AA
C 6006	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6007	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6008	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6009	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6010	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6011	VCCCCY1HH330J	S. CHIP CAP 33PF/50V	S	AA	AA
C 6012	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6013	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6014	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6015	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6016	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6017	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6018	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6019	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6020	VCKYCY1HF473Z	S. CHIP CAP 0.047UF/50V	S	AA	AA
C 6021	VCKYCY1HF473Z	S. CHIP CAP 0.047UF/50V	S	AA	AA
C 6022	VCKYCY1HF473Z	S. CHIP CAP 0.047UF/50V	S	AA	AA
C 6023	VCCCCY1HH121J	S. CAPACITOR 120PF/50V TAPED	S	AA	AA
C 6024	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6025	VCEA0A1CW476M	ELEC C 47UF 20% 16V	S	AA	AA
C 6026	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6027	VCCCCY1HH150J	S. CHIP CAP 15PF/50V TAPED	S	AA	AA
C 6028	VCCCCY1HH150J	S. CHIP CAP 15PF/50V TAPED	S	AA	AA
C 6029	VCKYCY1HF103Z	CHIP CAP 0.01UF/50V	S	AA	AA
C 6030	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6031	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6033	VCKYCY1HF223Z	SC CAPACITOR 0.022UF 50V TAPED	S	AA	AA
C 6034	VCKYCY1HF223Z	SC CAPACITOR 0.022UF 50V TAPED	S	AA	AA
C 6035	RC-FZ9683BMNJ	POL FILM C 68NF 5% 63V	S	AA	AB
C 6036	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6037	VCEA0A1HW106M	ELEC C 10UF 20% 50V	S	AA	AA
C 6038	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6039	VCKYCY1HF223Z	SC CAPACITOR 0.022UF 50V TAPED	S	AA	AA
C 6040	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA

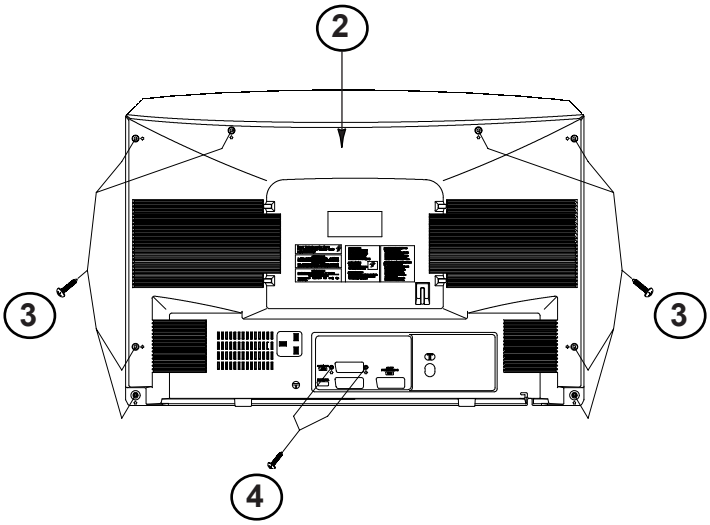
REF No.	PARTS	DESCRIPTION	*	SN CODE	EX CODE
C 6041	VCEA0A1HW106M	ELEC C 10UF 20% 50V	S	AA	AA
C 6042	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6043	VCEA0A1HW106M	ELEC C 10UF 20% 50V	S	AA	AA
C 6044	VCKYCY1HF103Z	CHIP CAP 0.01UF/50V	S	AA	AA
C 6045	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6046	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6047	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6048	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6049	VCKYCY1HF473Z	S. CHIP CAP 0.047UF/50V	S	AA	AA
C 6050	VCKYCY1HF473Z	S. CHIP CAP 0.047UF/50V	S	AA	AA
C 6051	VCKYCY1HF473Z	S. CHIP CAP 0.047UF/50V	S	AA	AA
C 6052	VCEA0A1HW106M	ELEC C 10UF 20% 50V	S	AA	AA
C 6053	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6054	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6055	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6056	VCKYCY1CB104K	S.CHIP TAPE 0.1UF 16V	S	AA	AA
C 6057	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6058	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6059	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6060	VCCCCY1HH220J	S. CHIP CAP 22PF/50V TAPED	S	AA	AA
C 6061	VCCCCY1HH220J	S. CHIP CAP 22PF/50V TAPED	S	AA	AA
C 6062	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6064	VCKYCY1HF103Z	CHIP CAP 0.01UF/50V	S	AA	AA
C 6065	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6066	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6067	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6068	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6069	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6070	VCKYCY1CF224Z	S.C.CAP 0.22UF 16V TAPED	S	AA	AA
C 6071	VCKYCY1CF224Z	S.C.CAP 0.22UF 16V TAPED	S	AA	AA
C 6072	VCKYCY1CF224Z	S.C.CAP 0.22UF 16V TAPED	S	AA	AA
C 6073	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6081	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6082	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6083	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6084	VCKYCY1HF473Z	S. CHIP CAP 0.047UF/50V	S	AA	AA
C 6085	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6086	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6087	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6088	VCEAGA0JW477M	ELEC C 470UF 20% 6,3V	S	AA	AA
C 6089	VCEA0A1CW106M	ELEC C 10UF 20% 16V	S	AA	AA
C 6090	VCEA0A1CW106M	ELEC C 10UF 20% 16V	S	AA	AA
C 6091	VCEA0A0JW108M	ELEC C 1000UF 20% 6,3V	S	AA	AA
C 6094	VCEA0A1HW106M	ELEC C 10UF 20% 50V	S	AA	AA
C 6095	VCEA0A1CW107M	ELEC C 100UF 20% 16V	S	AA	AA
C 6096	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
C 6143	VCKYCY1CB104K	S.CHIP TAPE 0.1UF 16V	S	AA	AA
C 6144	VCKYCY1CB104K	S.CHIP TAPE 0.1UF 16V	S	AA	AA
C 6145	VCKYCY1CB104K	S.CHIP TAPE 0.1UF 16V	S	AA	AA
C 6146	VCCCCY1HH101J	S. CHIP CAP 100PF/50V TAPED	S	AA	AA
C 6147	VCKYCY0JB105K	GRM39B 105K 6.3 (1608)SMD CAPACITOR	S	AA	AA
C 6149	VCKYCY1CB104K	S.CHIP TAPE 0.1UF 16V	S	AA	AA
C 6151	VCKYCY1CB104K	S.CHIP TAPE 0.1UF 16V	S	AA	AA
C 6152	VCKYCY1HF103Z	CHIP CAP 0.01UF/50V	S	AA	AA
C 6153	VCKYCY1CB104K	S.CHIP TAPE 0.1UF 16V	S	AA	AA
C 6154	VCKYCY1CB104K	S.CHIP TAPE 0.1UF 16V	S	AA	AA
C 6155	VCKYCY1CB104K	S.CHIP TAPE 0.1UF 16V	S	AA	AA
C 6156	VCKYCY1CB104K	S.CHIP TAPE 0.1UF 16V	S	AA	AA
C 6157	VCEA0A1CW106M	ELEC C 10UF 20% 16V	S	AA	AA
C 6158	VCKYCY1CB104K	S.CHIP TAPE 0.1UF 16V	S	AA	AA
C 6159	VCKYCY1CB104K	S.CHIP TAPE 0.1UF 16V	S	AA	AA
C 6160	VCKYCY1CB104K	S.CHIP TAPE 0.1UF 16V	S	AA	AA
C 6161	VCKYCY1CB104K	S.CHIP TAPE 0.1UF 16V	S	AA	AA
C 6162	VCEA0A1CW106M	ELEC C 10UF 20% 16V	S	AA	AA
C 6163	VCKYCY1CB104K	S.CHIP TAPE 0.1UF 16V	S	AA	AA
C 6164	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
C 6165	VCKYCY1HB103K	GRM39B 103K 50 (1608)SMD CAPACITOR	S	AA	AA
C 6166	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S	AA	AA
C 6167	VCCCCY1HH101J	S. CHIP CAP 100PF/50V TAPED	S	AA	AA
C 6168	VCCCCY1HH101J	S. CHIP CAP 100PF/50V TAPED	S	AA	AA
		RESISTORS			

REF No.	PARTS	DESCRIPTION	*	SN CODE	EX CODE
R 6001	VRS-CY1JF221J	S. CHIP RES. 220-OHM TAPED	S	AA	AA
R 6002	VRS-CY1JF220J	RES 0603 22 OHM 5% 1/10W SMD	S	AA	AA
R 6004	VRS-CY1JF103J	S.C. RESISTOR 10K OHM	S	AA	AA
R 6005	VRS-CY1JF103J	S.C. RESISTOR 10K OHM	S	AA	AA
R 6006	VRS-CY1JF102J	S.CHIP RES TAPE 1K OHM	S	AA	AA
R 6007	VRS-CY1JF221J	S. CHIP RES. 220-OHM TAPED	S	AA	AA
R 6008	VRS-CY1JF472J	S. RES. 4.7K OHM TAPED	S	AA	AA
R 6009	VRS-CY1JF221J	S. CHIP RES. 220-OHM TAPED	S	AA	AA
R 6010	VRS-CY1JF273J	S. CHIP RES. 27-OHM TAPED	S	AA	AA
R 6011	VRS-CY1JF682J	S. CHIP RES. 6.8 K OHM TAPED	S	AA	AA
R 6012	VRS-CY1JF472J	S. RES. 4.7K OHM TAPED	S	AA	AA
R 6013	VRS-CY1JF103J	S.C. RESISTOR 10K OHM	S	AA	AA
R 6014	VRS-CY1JF152J	S. CHIP RES. 1.5K-OHM	S	AA	AA
R 6015	VRS-CY1JF560J	CHIP RESISTOR 56 OHM	S	AA	AA
R 6016	VRS-CY1JF682J	S. CHIP RES. 6.8 K OHM TAPED	S	AA	AA
R 6017	VRS-CY1JF103J	S.C. RESISTOR 10K OHM	S	AA	AA
R 6018	VRS-CY1JF333J	S. CHIP RES. 33K-OHM TAPED	S	AA	AA
R 6019	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S	AA	AA
R 6020	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S	AA	AA
R 6021	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S	AA	AA
R 6022	VRS-CY1JF750J	S CHIP RESISTOR 75 OHM	S	AA	AA
R 6023	VRS-CY1JF102J	S.CHIP RES TAPE 1K OHM	S	AA	AA
R 6024	VRS-CY1JF224J	S. CHIP RES. 220K-OHM TAPED	S	AA	AA
R 6026	VRS-CY1JF562J	S. CHIP RES. 5.6K-OHM TAPED	S	AA	AA
R 6029	VRS-CY1JF562J	S. CHIP RES. 5.6K-OHM TAPED	S	AA	AA
R 6031	VRS-CY1JF153J	S CHIP RES. 15K-OHM TAPED	S	AA	AA
R 6032	VRS-CY1JF271J	S.CHIP RESIS. 270OHM TAPED	S	AA	AA
R 6033	VRS-CY1JF222J	S. CHIP RES. 2.2K-OHM TAPED	S	AA	AA
R 6034	VRS-CY1JF683J	RES 0603 68KOHM 5% 1/10W SMD	S	AA	AA
R 6035	VRS-CY1JF273F	RES 0603 27KOHM 1% 1/10W SMD	S	AA	AA
R 6038	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S	AA	AA
R 6039	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S	AA	AA
R 6040	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S	AA	AA
R 6042	VRS-CY1JF681J	S. CHIP RES. 680-OHM TAPED	S	AA	AA
R 6043	VRS-CY1JF103J	S.C. RESISTOR 10K OHM	S	AA	AA
R 6044	VRS-CY1JF202J	RES 0603 2KOHM 5% 1/10W SMD	S	AA	AA
R 6045	VRS-CY1JF202J	RES 0603 2KOHM 5% 1/10W SMD	S	AA	AA
R 6046	VRS-CY1JF103J	S.C. RESISTOR 10K OHM	S	AA	AA
R 6047	VRS-CY1JF473J	S. CHIP RES 47K-OHM TAPED	S	AA	AA
R 6049	VRS-CY1JF103J	S.C. RESISTOR 10K OHM	S	AA	AA
R 6055	VRS-CY1JF472J	S. RES. 4.7K OHM TAPED	S	AA	AA
R 6056	VRS-CY1JF472J	S. RES. 4.7K OHM TAPED	S	AA	AA
R 6058	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S	AA	AA
R 6060	VRS-CY1JF471J	S. CHIP RES. 470-OHM TAPED	S	AA	AA
R 6061	VRS-CY1JF103J	S.C. RESISTOR 10K OHM	S	AA	AA
R 6062	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S	AA	AA
R 6063	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S	AA	AA
R 6082	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6083	VRS-CY1JF220J	RES 0603 22 OHM 5% 1/10W SMD	S	AA	AA
R 6084	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6085	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S	AA	AA
R 6087	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6088	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6089	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6090	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6091	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6092	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6093	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6094	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6095	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6096	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6097	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6098	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6099	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6100	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6101	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6102	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6103	VRS-CY1JF221J	S. CHIP RES. 220-OHM TAPED	S	AA	AA
R 6104	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6105	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6106	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6107	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6108	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6109	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6110	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6111	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6112	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6113	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6114	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6115	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6116	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6117	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6119	VRS-CY1JF102J	S.CHIP RES TAPE 1K OHM	S	AA	AA
R 6120	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6121	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6122	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6123	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6124	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6125	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6126	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6127	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6128	VRS-CY1JF221J	S. CHIP RES. 220-OHM TAPED	S	AA	AA
R 6129	VRS-CY1JF221J	S. CHIP RES. 220-OHM TAPED	S	AA	AA
R 6130	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S	AA	AA
R 6131	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S	AA	AA
R 6133	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
R 6134	RR-XZ0212BMZZ	FUS RES 10R TAP 5% 1/2W	S	AA	AB
R 6135	VRS-CY1JF471F	CHIP RESISTOR 1% 470 OHM	S	AA	AA
R 6136	VRS-CY1JF122F	S.CHIP RES TAPE 1,2 OHM 1% 1/10W SMD	S	AA	AA
R 6137	VRS-CY1JF750J	S CHIP RESISTOR 75 OHM	S	AA	AA
R 6138	VRS-CY1JF750J	S CHIP RESISTOR 75 OHM	S	AA	AA
R 6139	VRS-CY1JF750J	S CHIP RESISTOR 75 OHM	S	AA	AA
R 6140	VRS-CY1JF332J	S. CHIP RES. 3.3K-OHM TAPED	S	AA	AA
R 6141	VRS-CY1JF332J	S. CHIP RES. 3.3K-OHM TAPED	S	AA	AA
R 6142	VRS-CY1JF750J	S CHIP RESISTOR 75 OHM	S	AA	AA
R 6143	VRS-CY1JF750J	S CHIP RESISTOR 75 OHM	S	AA	AA
R 6144	VRS-CY1JF103J	S.C. RESISTOR 10K OHM	S	AA	AA
		MISCELLANEOUS PARTS			
(K)	QPLGN0842CEZZ	PLUG	S	AA	AB
(RS)	QPLGN0442CEZZ	PLUG	S	AA	AA
(RT)	QPLGN0242CEZZ	BENT PLUG 2 WAYS WHITE J.S.T.	S	AA	AA
(VI)	QPLGN0842CEZZ	PLUG	S	AA	AB
(YA)	QPLGZ2541CEZZ	CONECTOR 25P JDV PS25LB-10-1	S	AB	AF
(YB)	QPLGZ2541CEZZ	CONECTOR 25P JDV PS25LB-10-1	S	AB	AF
(YC)	QPLGN0342CEZZ	CONECTOR 3 VIAS 90Î	S	AA	AA
FB 6001	VRS-TQ2BD000J	3216 0 OHM 5% 1/8W SMD	S	AA	AA
FB 6002	VRS-TQ2BD000J	3216 0 OHM 5% 1/8W SMD	S	AA	AA
FB 6003	VRS-TQ2BD000J	3216 0 OHM 5% 1/8W SMD	S	AA	AA
FB 6004	VRS-TQ2BD000J	3216 0 OHM 5% 1/8W SMD	S	AA	AA
FB 6005	RBLN-0081GEZZ	FERRITE BLM18BD601SN1D MURATA	S	AA	AA
FB 6006	RBLN-0058TAZZ	FERRITE BLM21BD222SN1L MURATA	S	AA	AB
JF 6001	VRS-CY1JF224J	S. CHIP RES. 220K-OHM TAPED	S	AA	AA
JF 6002	VRS-CY1JF224J	S. CHIP RES. 220K-OHM TAPED	S	AA	AA
JF 6003	VRS-CY1JF224J	S. CHIP RES. 220K-OHM TAPED	S	AA	AA
JF 6004	VRS-CY1JF224J	S. CHIP RES. 220K-OHM TAPED	S	AA	AA
JF 6005	VRS-CY1JF224J	S. CHIP RES. 220K-OHM TAPED	S	AA	AA
JF 6006	VRS-CY1JF473J	S. CHIP RES 47K-OHM TAPED	S	AA	AA
JF 6007	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
JF 6013	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
JF 6015	VCKYCY0JB105K	GRM39B 105K 6.3 (1608)SMD CAPACITOR	S	AA	AA
JF 6019	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
JF 6027	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
JF 6028	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
JF 6032	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S	AA	AA
PWB-D		**FRONTAL SWITCH**			
		DIODES			
D 6401	RH-EX0412BMZZ	ZENER DIODE BZX79C7V5	S	AA	AB
D 6402	RH-EX0412BMZZ	ZENER DIODE BZX79C7V5	S	AA	AB
		CAPACITORS			
C 6336	VCKZPA1HF103Z	CERAM C 10NF % 50V	S	AA	AA

	REF No.	PARTS	DESCRIPTION	*	SN CODE	EX CODE
	C 6337	VCKZPA1HF103Z	CERAM C 10NF % 50V	S	AA	AA
	C 6428	VCKZPA1HB102K	CERAM C 1NF 10% 50V	S	AA	AA
	C 6429	VCKZPA1HB102K	CERAM C 1NF 10% 50V	S	AA	AA
⚠	C 6701	RC-FZ0188BMZZ	C B81130-C1334-M 330NF 275V X2 SIEMENS	S	AA	AD
	C 6707	VCEA0A1CW106M	ELEC C 10UF 20% 16V	S	AA	AA
			RESISTORS			
	R 6316	VRD-RA2BE391J	RES 390 OHM 5% 1/8W	S	AA	AA
	R 6317	VRD-RA2BE391J	RES 390 OHM 5% 1/8W	S	AA	AA
	R 6701	VRD-RA2HD124J	RES 120KOHM 5% 1/2W	S	AA	AA
	R 6702	VRD-RA2HD124J	RES 120KOHM 5% 1/2W	S	AA	AA
	R 6703	VRD-RA2BE182F	RES 1,8KOHM 1% 1/8W	S	AA	AA
	R 6704	VRD-RA2BE122F	RES 1,2KOHM 1% 1/8W	S	AA	AA
	R 6705	VRD-RA2BE561F	RES 560 OHM 1% 1/8W	S	AA	AA
	R 6706	VRD-RA2BE222F	RES 2,2KOHM 1% 1/8W	S	AA	AA
			MISCELLANEOUS PARTS			
	(A)	QCNW-2826BMZZ	WIRE (AA) 2 WAYS	S	AB	AE
	(A)	QPLGN0260CEZZ	CONNECTOR 2 PIN TV-50P-02-V2 A TAIKO	S	AA	AA
	(HD)	QCNW-2849BMZZ	WIRE 3 WAYS HD	S	AB	AE
	(HD)	QPLGN0341CEZZ	PLUG	S	AA	AA
	(M)	QPLGN0360CEZZ	CONNECTOR 3 PIN TV-50P-03-V2 A TAIKO	S	AA	AA
	(SS)	QCNW-2792BMZZ	WIRE 3 WAYS (SS)	S	AB	AE
	(SS)	QPLGN0341CEZZ	PLUG	S	AA	AA
	(SWRC)	QCNW-A763WJZZ	MAMGUERA 2 AISLANTE 4 VIAS (SWRC)	S	AB	AE
	(SWRC)	QPLGN0441CEZZ	PLUG 4PIN	S	AA	AA
	(YC)	QCNW-A764WJZZ	MAMGUERA 2 AISLANTE COAXIAL	S	AB	AF
	(YC)	QPLGN0341CEZZ	PLUG	S	AA	AA
	CN 0004	QJAKJ0101SEZZ	MINIATURE PHONE JACK MORNING STAR	S	AA	AD
⚠	F 6701	QFS-C3226CEZZ	FUSE T3.15AH 250V	S	AC	AE
	J 6401	QJAKZ0015CEZZ	JACK	S	AH	AM
	L 6318	VP-DF3R3K0000	PEAK COIL 3,3UH 10%	S	AB	AB
	LP 6701	RLAMP0001BMZZ	NEON TYPE 4/30HB NEOTRONIC	S	AB	AC
	M 6701	RRMCUA004WJZZ	RECEPTOR M/D TSOP1738. VISHAY	S	AB	AG
⚠	S 6701	QSW-P0613BMZZ	SWITH S95 GDE	S	AB	AG
	S 6702	QSW-K0079GEZZ	TACTILE SWITCH	S	AA	AA
	S 6703	QSW-K0079GEZZ	TACTILE SWITCH	S	AA	AA
	S 6704	QSW-K0079GEZZ	TACTILE SWITCH	S	AA	AA
	S 6706	QSW-K0079GEZZ	TACTILE SWITCH	S	AA	AA
		LHLDF1527BMZZ	CONECTION HOLDER	S	AC	AG
		LHLDP1001BMZZ	HOLDER NEON	S	AA	AB
		LHLDW1019CEZZ	HOLDER	S	AA	AB
		QFSHD1001BMZZ	FUSE HOLD.EYF52BC=PANASON	S	AA	AA
		QFSHD1002BMZZ	FUSE HOLD.EYF52BC=PANASON	S	AA	AA
			MISCELLANEOUS PARTS			
		LHLDW1009CEZZ	HOLDER	S	AA	AA
		LHLDW1060CEZZ	HOLDER	S	AA	AA
		LHLDZ1714BMZZ	HOLDER ANODE CAP	S	AA	AA
⚠		QACCZ2100BMSA	AC CORD	S	AH	AR
		RRMCG1073BMSA	R/C FLAT 50HZ MODEL HOSHIDEN	S	AK	AW
		SPAKP2006BMZZ	CEL-AIR WRAPPER	S	AC	AG
		UBATU0013TAZZ	BATTERY R6(X2) TOSHIBA	S	AB	AF
		LHLDW1009CEZZ	HOLDER	S	AA	AA
		LHLDW1060CEZZ	HOLDER	S	AA	AA
	(S)	QCNW-2862BMZZ	WIRE SPEAKERS FOR 32" FLAT	S	AC	AG
		VSP1206PB617A	SPAEAKER 7 OHM 12x6CM SEA TRADE ELECTRON	S	AE	AN
		XTASD30P10000	SCREW	S	AA	AA
		XTASD40P16000	SCREN	S	AA	AA
		SPAKC5495BMZZ	PACK-CASE	S	AP	BA
		SPAKX4077BMZZ	PACK-AD	S	AL	AW
		GLEGM9009BMFW	LEG FOR RADIATOR	S	AA	AA
		VHITDA6111Q-1	IC TDA6111Q PHILIPS	S	AH	AQ
		LHLDW1006CEZZ	HOLDER	S	AA	AB
		LCHSM1011BMKA	CHASSIS FRAME V0	S	AE	AN
		LHLDW1033CE00	HOLDER	S	AA	AA
		LHLDW1060CEZZ	HOLDER	S	AA	AA
⚠		QCNW-2857BMZZ	MAT WIRE HR-16521 TO FLYBACK HR-8168	S	AC	AK
		XTASD30P10000	SCREW	S	AA	AA
	(H)	QCNW-2783BMZZ	WIRE (KA) 5 WAYS	S	AB	AF
	(K)	QCNW-2793BMZZ	WIRE (K)	S	AD	AL
	(MO)	QCNW-2743BMZZ	WIRE (4)VIAS (H)	S	AA	AE

	REF No.	PARTS	DESCRIPTION	*	SN CODE	EX CODE
	(SVM)	QCNW-2757BMZZ	WIRE (KC) 2 VIAS	S	AB	AF
	(VI)	QCNW-2901BMZZ	VIDEO CABLE (VI)	S	AE	AN
	FB 0001	RCORF0002BMZZ	FERRITE CORE TFC-16816EX	S	AF	AK
			OWNERS MANUALS			
		TINS-7226BMN0	OWNERS MANUAL 28JW76E	S	AK	AW
		TINS-A198WJN0	OWNERS MANUAL 28JW76EES	S	AH	AV
		TINS-A387WJN0	OWNERS MANUAL 28JW76EC	S	--	--
			CABINET PARTS			
⚠	1	CCABA1354BMV3	CABINET SET+ELEC ASS	S	--	--
	1.1	GDORF1063BMSA	DOOR	S	AA	AE
	1.2	PKAI-1083BM00	DOOR RATCH	S	AC	AF
	1.3	HINDP5122BMSA	INDICATOR	S	AA	AE
	1.4	HBDGB3141CESA	SHARP BADGE	S	AB	AG
	1.5	HDECQ0067BMSA	DECORATION	S	AA	AC
	1.6	JBTN-1080BMSA	UP/DOWN BUTTON	S	AA	AD
	1.7	JBTN-1079BMSA	POWER BUTTON	S	AA	AC
⚠	2	GCABB1126BMKA	REAR CABINET	S	AS	BD
	3	XTASB40P20000	SCREW	S	AA	AA
	4	XTBSB30P13000	SCREW	S	AA	AA





SERVICING NOTES

1. Procedure to reprogram the flash memory (IC6003) contained in the digital module

Equipment needed

- A PC running MS Windows (Win 95/98, Windows 2000 or Windows XP).
- A copy of the software “Tiny M2Flash” version 1.06 or higher.
- A PWB7359 (version N1 or higher) digital module including the Micronas SDA6000 microcontroller (also known as M2) and the Fujitsu MBM29LV160/BE 1Mx16 bit Flash memory. Operation with other devices is not guaranteed.
- A level-converter circuit to make the {+3.3 V, 0} voltages of the RS232 port at the digital module compatible with the {+12 V, -12 V} voltages of the RS232 port at the PC. This circuit can be built around a MAX3222.
- A power supply to feed the digital module with 3.3 V.
- A RS232 cable for PC (PC-PC Type).

Hardware

Tiny M2Flash requires the M2 digital module to be connected as shown in figure 18.

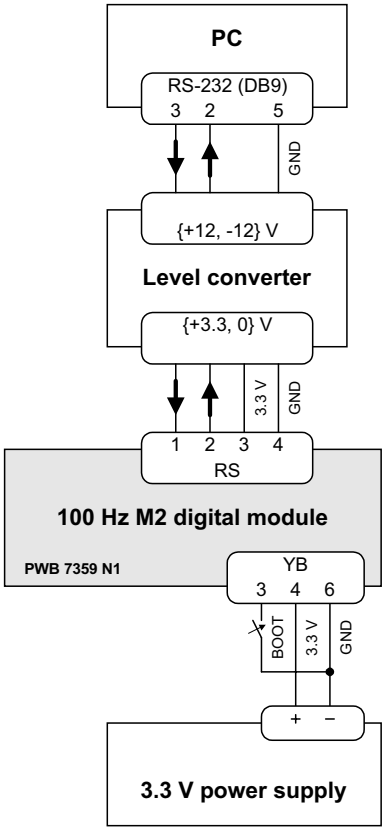


Figure 18: Block diagram showing the hardware needed to use *Tiny M2Flash*.

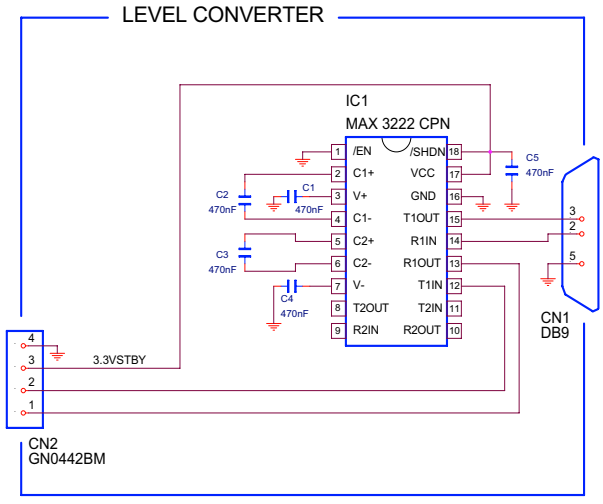


Figure 19: Level Converter Schematic Diagram

In order to make the M2 start in the bootstrap loader mode (which is needed to work with *Tiny M2Flash*), pin 3 of connector YB must be connected to ground at the moment of resetting the digital module (connecting the power to the module makes it reset). It may also stay connected to ground during the whole programming process, if desired.

Software

The program is composed of two files: One “.exe” and one “.obj” file. The first one contains the MS Windows code that runs in the PC. The second one contains the machine code that runs in the M2 microcontroller. The “.obj” file must be moved/copied to “C:\” (there is where the program looks for it.) The program writes into the flash memory the information

contained in an ".hex" file. This file must conform to the Intel HEX-32 format. The software *does* check whether the program operation has been successful or not.

1 Installation of "Tiny M2Flash":

1.1 Place the ".obj" file in "C:\".
1.2 Place the ".exe" file anywhere.

2 "Tiny M2Flash" usage:

2.1 Choose the serial port number that this instance of the program will use to communicate with the digital module.
2.2 Browse the file system and choose the ".hex" file that contains the information to be written into the flash.
2.3 Tie pin 3 of connector YB at the digital module to ground. Turn on the 3.3 V power supply that feeds the digital module. This will make it reset.
2.4 Press the "PROGRAM" button once. This will automatically:
  2.4.1 Open the serial port.
  2.4.2 Send the (machine code) "server" program to the M2 microcontroller. The PC will act as the "client."
  2.4.3 Erase the whole flash chip.
  2.4.4 Program the flash with the information contained in the ".hex" file.
2.5 If needed, the button "STOP" can be pressed to stop the execution of that instance of the program in the PC. However, this will not necessarily interrupt whatever the M2 was doing. It is recommended that the digital module be resetted after "STOP" has been pressed in the program.
2.6 The program will display the message "OK" or "ERROR," depending on whether the programming operation has been successful or not.
2.7 Turn off the power supply.

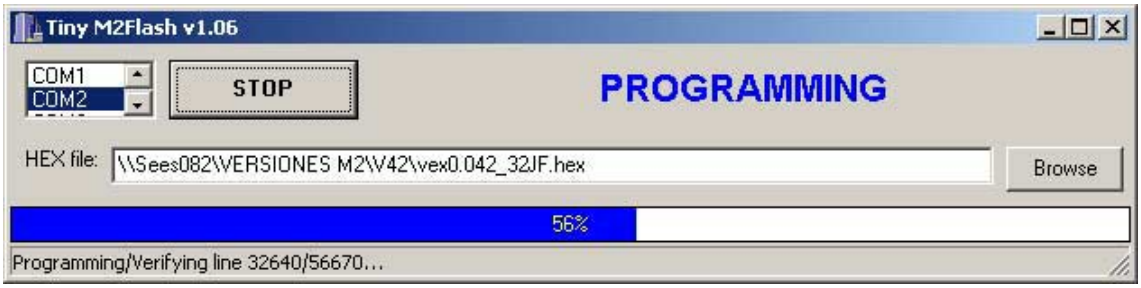
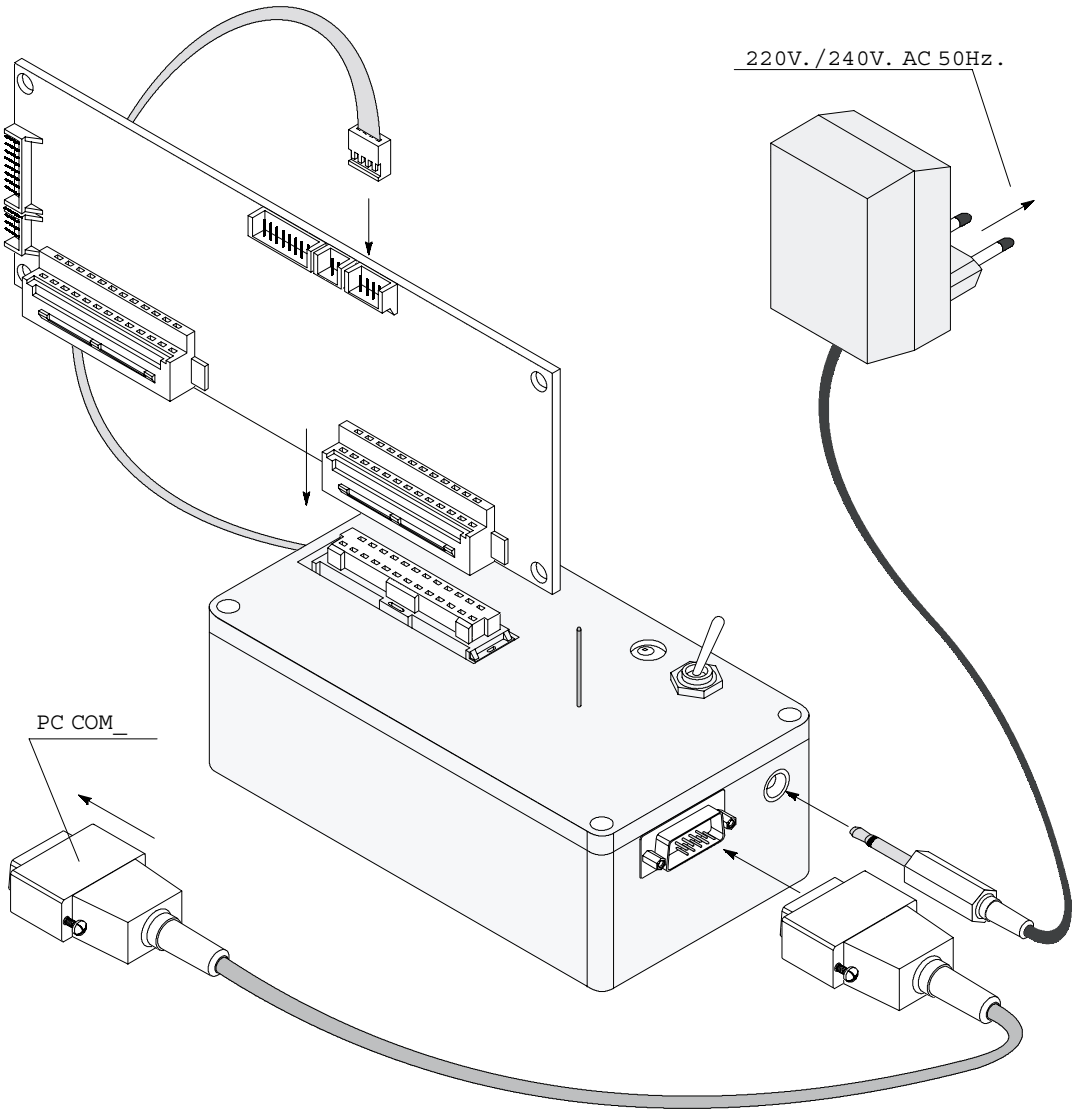


Figure 20: Screenshot of Tiny M2Flash.

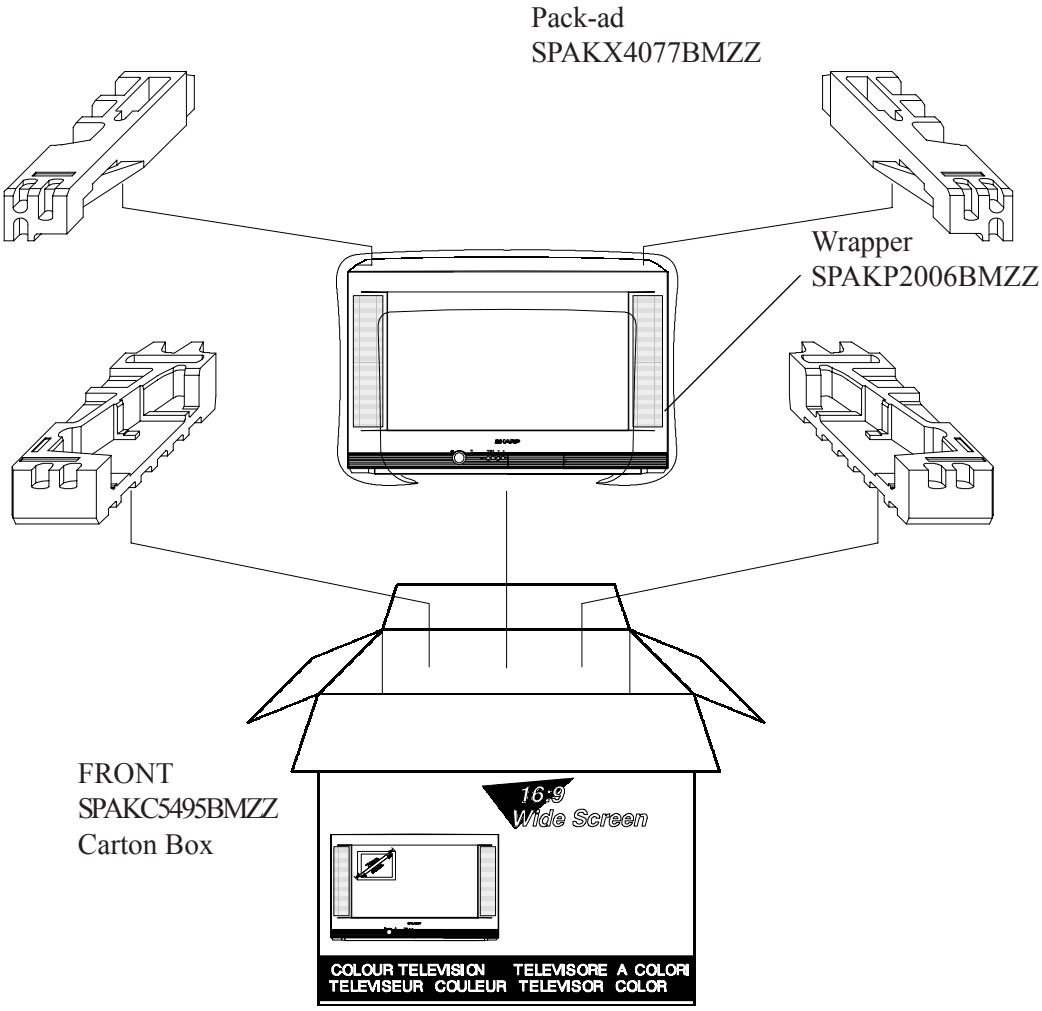
Note: The progress bar starts growing right *after* the flash memory has been erased.

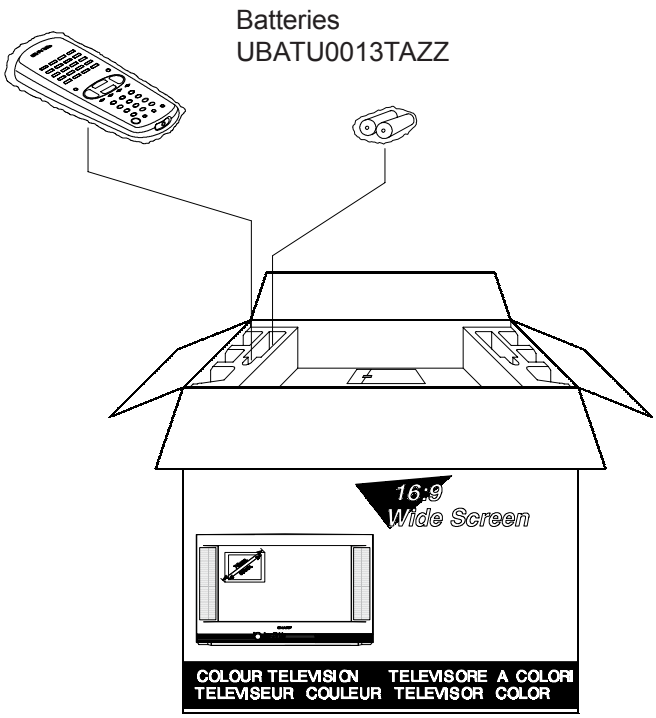
2. GA-200 (M2) FLASH Memory Writer

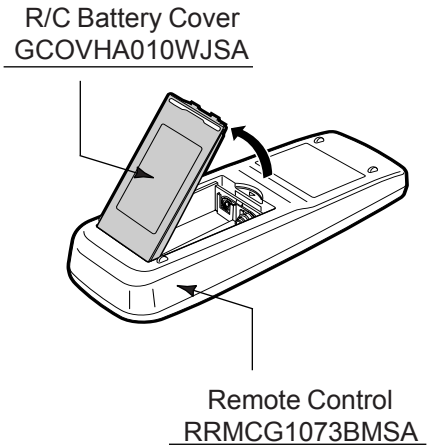
This Kit is available under request in EPC.
Kit code: CKIT-0001WJV0.



3. Packing of the Set & Accessories







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Notes:

Notes:

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